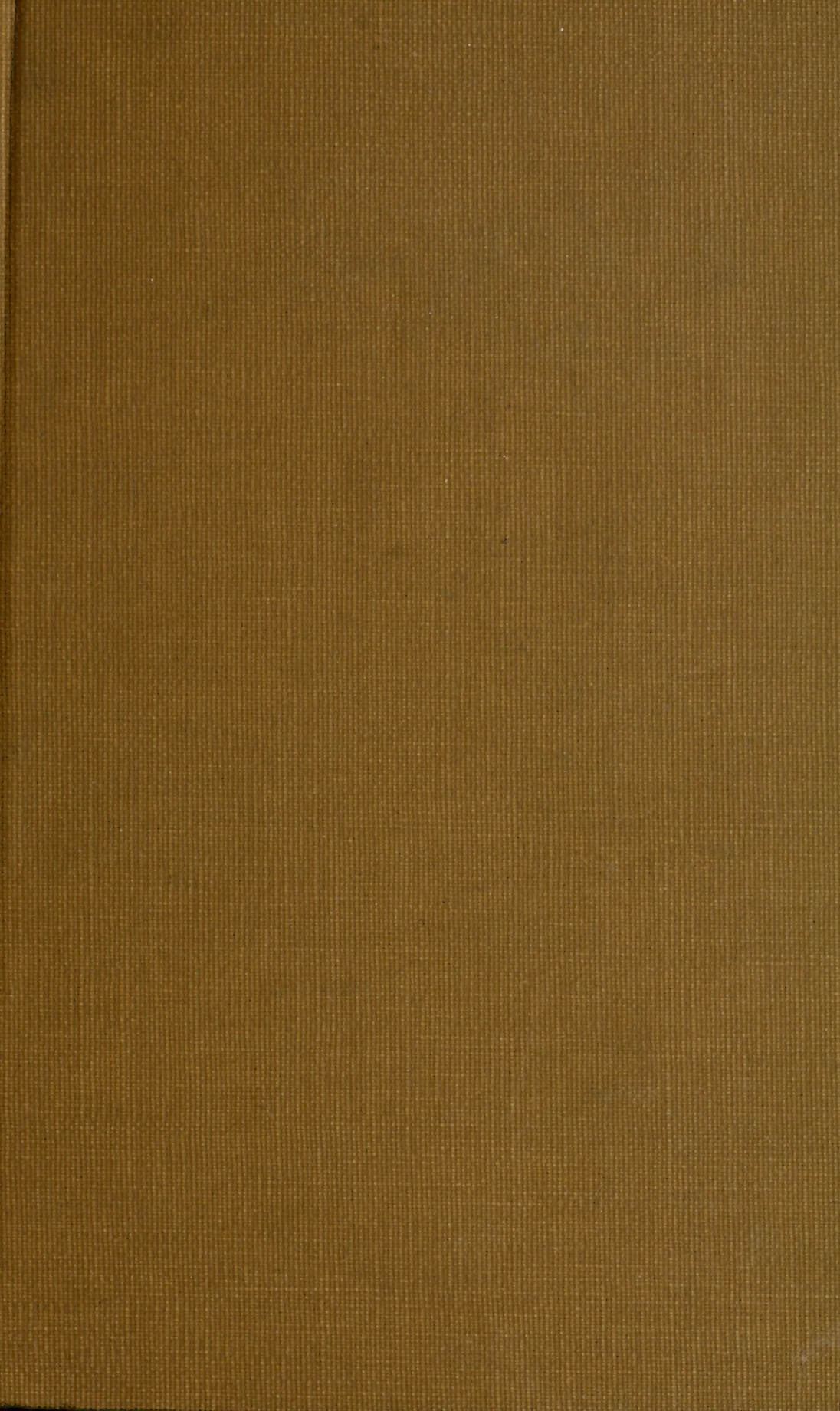
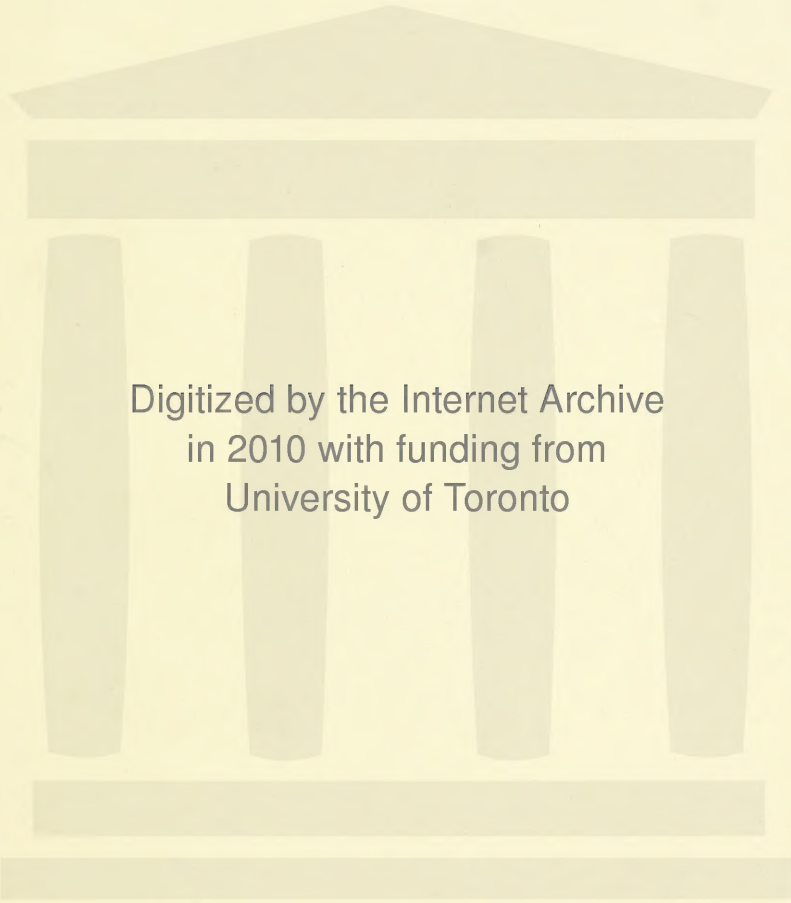




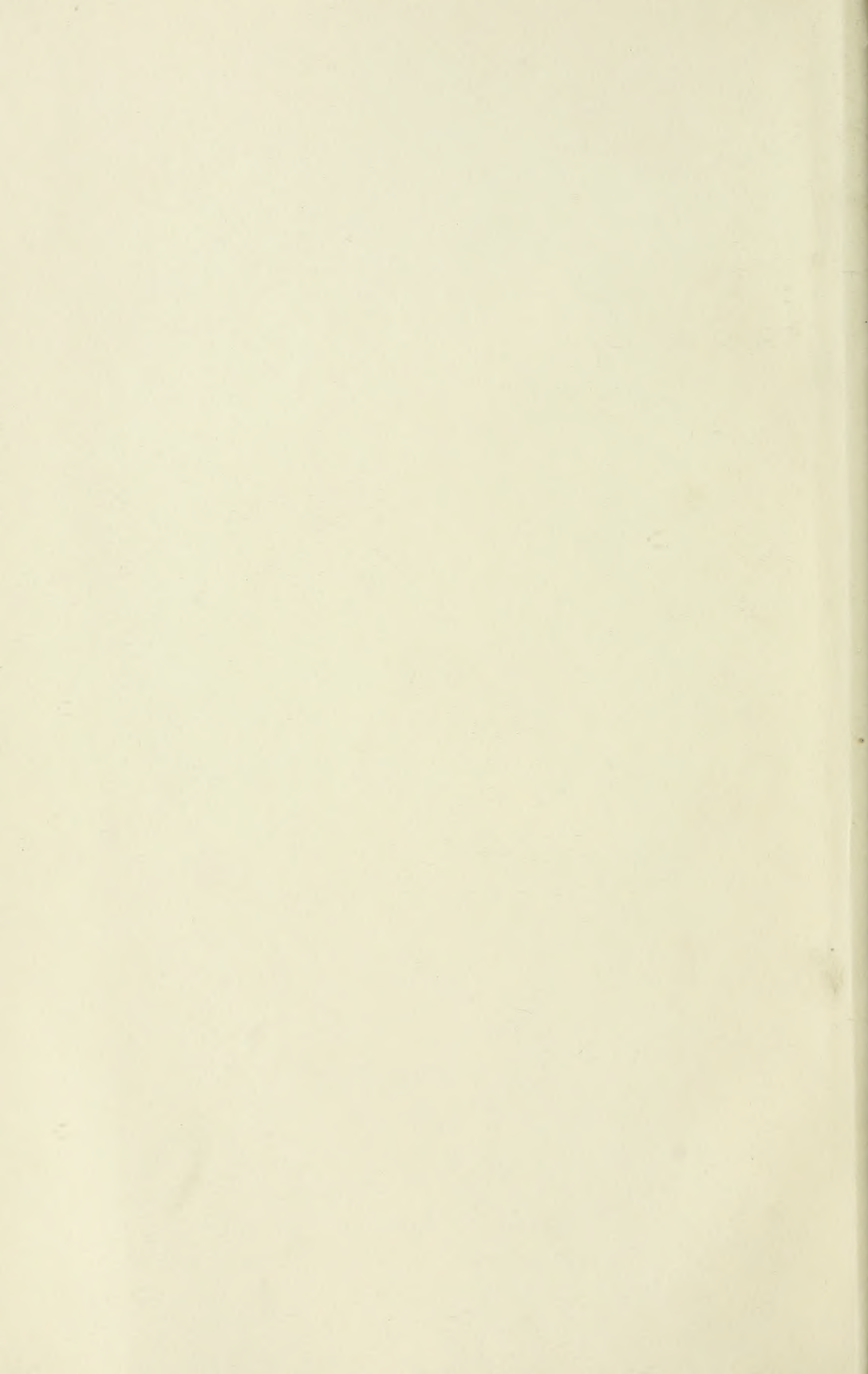
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THE Montreal Medical Journal

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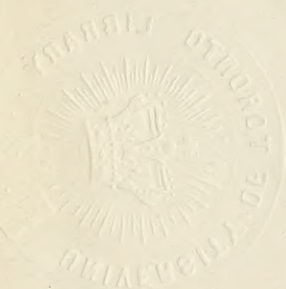
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ON SO-CALLED FUNCTIONAL HEART MURMURS.¹

BY

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Among the signs of organic disease which perplex the diagnostician by appearing when the organism is in health, or at least upon its borderland, cardiac systolic murmurs take a prominent place. Their occurrence as significant of a purely functional disturbance without any underlying valvular lesion, is of course well recognised, but their frequency in this connection is perhaps scarcely appreciated by the profession. In the discussion on "The Prognosis of Cardiac Disease in its Bearings upon Life Insurance," led by Sir Wm. Gairdner at the recent meeting of the British Medical Association² systolic murmurs are barely mentioned among all the doubtful signs of cardiac disease complicating an "estimation of life." Yet it is chiefly in relation to such questions as those of life insurance that the subject is of special interest and assumes some proportions as a difficult problem demanding solution. Indicative on the one hand, of that form of organic disease which most seriously threatens longevity, yet, on the other, consistent with nothing more serious than a temporary lowering of the general tonus, a well marked systolic murmur is capable of plunging the conscientious medical examiner into most uncomfortable doubt. For the subject is unfortunately as obscure as it is important.

Not only is the murmur subject to all the variations governing the principles of sound, but further, one's conclusions can have but a relative worth, for they are rarely verified by autopsy, and can only be

¹ Read before the Montreal Medico-Chirurgical Society, Nov. 21st, 1898.

² British Medical Journal, Sept. 17th, 1898.

formed by continued observation of cases and by amassing an abundant material.

Some months ago, Dr. C. F. Martin suggested to me a statistical study of systolic murmurs as they occurred in the medical records of the Royal Victoria Hospital. I am indebted to the authorities of the hospital for their kind permission to carry out this suggestion and I have to thank Dr. Martin for much assistance in the arrangement and revision of the work.

It must be admitted that the term "Functional Murmur" as at present usually employed, is a misnomer. On the one hand, *all* murmurs are functional, whether due to organic disease of the heart or to a malady of the blood itself, inasmuch as they depend on an impairment of function of the valves, or the parts in their immediate vicinity, or else to eddies abnormally carried in the course of the circulation. On the other hand, what are usually called functional murmurs, are often, indeed very often, due to a degeneration of the heart muscle, be it in the cells of the wall itself or in the cells of the papillæ or trabeculæ.

It is difficult to define functional murmurs in any other way than as temporary murmurs occurring in a heart with no other signs of valvular disease, and which ultimately disappear. This will exclude the organic murmurs which from time to time cannot be heard at all even when extensive valvular vegetations occur, and will admit of the term being applied where chlorosis, typhoid fever, etc., occasion murmurs through the altered conditions of blood or heart muscle. Hence we would say that temporary parenchymatous degeneration of the myocardium produces functional (not organic) murmurs.

Leube¹ has recently analysed the various conditions under which systolic murmurs occur and the requirements for a differential diagnosis. His classification is, briefly, somewhat as follows:

1. *Accidental Murmurs*: Systolic, heard most strongly at the base; may or may not be transmitted; no pulmonary accentuation; no increase of cardiac area.

2. *Relative Mitral Insufficiency*: Pure systolic moderately loud murmur; a weak impulse; moderate pulmonary accentuation; moderately increased cardiac area to right and left; relatively small often irregular pulse (myocarditis or myo-asthenia); history.

3. *Acute Mitral Endocarditis*: Soft systolic murmur at apex; cardiac area slightly increased to the left; pulmonary second moderately accentuated; pulse and heart impulse relatively strong, co-existence of fever or of some infectious disease.

¹ Zur Diagnose der Systolischen Herzgeräuschen, Deut. Arch. f. Klin. Med. Nov. 5th, 1896.

4. *Chronic Disease of Mitral Valve*: Systolic murmur: generally louder and harsher; increased cardiac area; marked pulmonary accentuation; impulse moderately increased; pulse relatively strong and regular; frequent association with the signs of mitral stenosis; history of adequate cause for assuming organic cardiac disease.

Pure systolic murmurs then may be regarded as:

(a) *Valvular*, depending on an organic deformity of the mitral valve, or upon its relative incompetence due to so-called cardiac myoasthenia or to a myocarditis; and

(b) *Non-valvular*, accidental, or hæmic, heard best over the base of the heart and produced, according to most authorities, in the great vessels by lack of tone in their walls, or by lowered peripheral blood pressure. Such pure accidental murmurs when typical are supposed to present little difficulty in diagnosis for they are basal and unaccompanied by pulmonary accentuation or increase of the cardiac area, and claim differentiation only from aortic and pulmonary stenosis.

These latter are not easily confounded with basal functional murmurs. But with apical murmurs the matter is quite different and presents constant perplexity. Here it is necessary for prognosis to differentiate not only a relative incompetency from the true insufficiency of a diseased mitral valve; it is also most important to distinguish the permanent relative insufficiency of organic cardiac disease (primary dilatation with hypertrophy, myocarditis, etc.), from the temporary relative insufficiency of anæmic or febrile conditions where the valves fail to close simply from weakness of the papillary muscles and trabeculæ, or from dilatation due to lack of tone of the cardiac muscle itself.

From Jan. 1895, to Sept. 14th, 1898, the number of cases admitted to the wards of the Royal Victoria Hospital, were some 3,302; of these, I have examined the case reports of 2,780. All cases were rejected whose histories showed pure systolic murmurs known to be due to organic cardiac disease, whether pericarditis, myocarditis or endocarditis, and, as possibly organic, all cases where there was a record of previous or concomitant chorea, tonsillitis, acute and chronic rheumatism, arterio-sclerosis and acute and chronic Bright's disease. I retained for study 589 cases in which pure systolic murmurs occurred (21 per cent). After eliminating cases giving a previous history of rheumatism, nephritis, etc., or showing arterio-sclerosis from this number, there remained a total of 466 cases, or not quite 17 per cent. of pure systolic murmurs occurring in patients in whom there was nothing either in the previous history or in the general condition to suggest organic cardiac disease; with the excep-

tion of a possible old endocarditis based on a previous history of scarlatina which occurred in a certain proportion of cases, and which I noted but did not eliminate.

This (17 per cent.) is a high percentage, and it will be objected to it, that without doubt many of these are really cases of organic cardiac disease of insidious onset; but when one considers that in some of the many cases rejected because there was a bare suggestion of etiology, the murmurs may have been functional, and further, that, present as this sign often is when the patient is suffering from a malady that would never suggest it, the less marked murmurs must, even in these carefully kept records, have sometimes escaped observation, it is evident that this percentage of 17 per cent. must be pretty close upon the facts.

In the subjoined classification, various plans are adopted and the effort has been made to seek a diagnosis of the underlying physical condition. In functional murmurs, this is generally admitted to be an anæmia or a toxæmia leading, possibly through the nerve centres, to lowered vascular tonus and to consequent irregularities in the blood current.

I have divided all the conditions as follows:

1. Murmurs occurring in febrile and afebrile conditions.
2. Murmurs occurring in anæmic and non-anæmic conditions.
3. Murmurs occurring in pulmonary tuberculosis. This being kept separately as here the condition includes to a marked degree, fever with cachexia and anæmia.

4. Classification according to the nature of the sound with special reference to:

- (a) Site of murmur.
- (b) Transmission
- (c) Condition of pulmonary second sound.
- (d) Rhythm.
- (e) Cardiac enlargement.

With reference to the *statistics* it is of note that:

In 466 cases with undoubted functional murmurs, 269 were in afebrile, and 163 in febrile cases.

Of the 269 afebrile cases, 185 showed anæmia; 74 none.

Of the 163 febrile cases, 85 showed anæmia; 78 none.

In 44 cases of pulmonary phthisis, 35 showed anæmia; 9 none.

The following *table* will indicate the main features it is desired to illustrate as suggested in a *few of the diseased conditions* with functional murmurs and the characteristics associated therewith. The relative frequency of murmurs in febrile and afebrile conditions and in pulmonary phthisis is also shown.

DISEASES.	Totals	Sub-totals.		Systolic Murmur at Apex.		Systolic Murmur at Pulmonary Area.		Systolic Murmur at Apex and Base.		Systolic Murmur at Aortic Cartilage.		Systolic Murmur Irregularly Situated.		Diastolic.	
		Anæmia.	No Anæmia.	Anæmia.	No Anæmia.	Anæmia.	No Anæmia.	Anæmia.	No Anæmia.	Anæmia.	No Anæmia.	Anæmia.	No Anæmia.	Anæmia.	No Anæmia.
Anæmias.	87	87	....	24	....	21	....	36	....	5	....	1	....	4	....
Pernicious Anæmia.	16	16	....	9	....	1	....	5	....	1	....	....	....	....	....
Chlorosis.	46	46	....	7	....	15	....	19	....	3	....	....	....	2	....
Leucæmia.	4	4	....	2	....	....	....	1	....	....	....	....	....	1	....
Hodgkins.	3	3	....	1	....	1	....	1	....	....	....	....	....	....	....
Secondary to Hemorrhage or C-a.	22	22	....	5	....	4	....	10	....	1	....	1	....	1	....
Typhoid Fever.	78	31	47	9	18	12	9	5	15	3	3	2	2	....	....
Hysteria and Functional Nervous Disorders.	61	30	31	13	14	11	8	5	5	....	4	1	1	....	2
Exophthalmic Goitre.	12	4	7	1*	2	2	1	1	3	....	1	....	....	....	1
Pulmonary Tuberculosis.	44	35	9	11	4	12	4	8	....	1	1	2	....	1	....
Febrile Conditions.	163	85	78	20	32	37	10	22	26	4	7	3	3	....	....
Afebrile Conditions.	369	185	74	67	36	47	16	49	7	9	6	7	5	6	4
Total number of Murmurs.	466	305	161	98	72	96	30	79	33	14	14	12	8	7	4

* Tachycardia only.

It will be seen from the foregoing how frequently functional murmurs have been found when no apparent cause was discovered; neither anæmia, fever or other usually recognised cause; and further, that in site and rhythm of murmur some unusual conditions occur.

In the *true anæmias* are included, pernicious anæmia, chlorosis, Hodgkin's disease and anæmia secondary to hæmorrhage or carcinoma. These form 87 cases of which 24 have apex murmurs; 36 have murmurs at apex and base, while in only 21 were the murmurs mainly at the pulmonary cartilage.

The *origin* of the murmur cannot always be read from its situation; Dr. Heitler, in an article on "The Localisation of Systolic Mitral Murmurs"⁴ makes an exhaustive study of this point. He states that his researches lead him to disbelieve the dogma that murmurs of different *timbre* are necessarily of different origin, even though they be heard less loudly in the interspace. He argues that murmurs are formed of a mixture of sounds which are not transmitted as a whole in any direction but that certain parts are heard best where the conditions for transmission are most favorable, and he cites a case, seen post-mortem to be one of pure mitral regurgitation, where there was a loud musical murmur at the apex growing fainter towards the base and a loud murmur at the aortic cartilage of the same quality as that at the apex.

This is confirmed by other authorities in the case of regurgitant murmurs due to endocarditis where roughened surfaces combine with altered blood currents to produce a mixture of sounds, but in functional cases there are probably less complicated conditions. In these anæmias where the double murmurs which occurred, are often described as of different *timbre*, rough at one orifice, blowing at the other, they are frequently transmitted in two directions: into the axilla from the apex, and upwards from the pulmonary orifice, indicating that they really are the double murmurs of a relative mitral insufficiency and of a physiological pulmonary stenosis. Such at all events seems quite as plausible an explanation as any other.

Leube, in his article lays much stress on the site of the murmur. He states that in lesser degrees of blood alteration, accidental murmurs are produced in the great vessels at the base from lowered tonus of their walls through the action of impoverished nerve centres, while the more severe grades of anæmia and intoxication lead to a myoasthenia or even a myodegeneratio cordis, and to the *apical* murmurs of relative mitral insufficiency.

The anæmic cases I have studied tend emphatically to confirm this

, Wiener Klin. Woch., No. 17, 1897.

dictum. In pernicious anæmia, representing the most extreme degree, we know that there do exist often extensive degenerative changes in the myocardium leading to weakening of the heart and the papillary muscles and to consequent dilatation. Here then are the conditions for a relative insufficiency, and here every murmur is apical. Of the 16 cases, 10 occurred alone at the apex and pulmonary cartilage, and the only one heard best at the pulmonary is transmitted into the axilla, indicating that it too is an apical murmur. In chlorosis, on the other hand, where there is a lesser degree of blood alteration, there are only seven cases at the apex against 15 at the pulmonary area, and 19 heard with equal force both at the pulmonary cartilage and apex. Of the seven cases with a murmur at the apex, five showed only slight chlorosis, scarcely sufficient one would think to produce a relative insufficiency; the thought is suggested that although mitral valvular murmurs are heard best at the apex, all apical murmurs are not necessarily valvular.

The apical murmurs of pernicious anæmia, however, do not always present the other cardiac conditions that we would expect to find in a relative mitral incompetency of some duration. The murmur is generally transmitted, but in only ten cases is there cardiac enlargement or pulmonary accentuation; but the absence of these signs is explained by the physical facts. We cannot expect much increase in area where the heart though frequently dilated, is atrophied rather than hypertrophied, and the right ventricle must often be too weak to give rise to pulmonary accentuation. In pernicious anæmia where pulmonary accentuation does occur (as in most advanced cases) it is probably dependent on the dyspnoea, due to the imperfect aëration of the tissues by the diminished number and power of the oxygen-carrying elements of the blood.

The cases of *exophthalmic goitre* illustrate the same point as do the anæmias. It is known that in this disease in cases where there is much vasomotor disturbance, there is apt to be dilatation of the overworked heart resulting in a relative mitral insufficiency. In the ten cases before me there is only one that does not show marked implication of the vasomotor system; in this one there is but a slight anæmia (erythrocytes 4,000,000, hæmoglobin (Fleischl) 70 per cent.) and the murmur is hæmic in its character being heard only at the pulmonary cartilage without pulmonary accentuation or cardiac enlargement.

In all the other nine cases there is vasomotor disturbance and the murmur is at the apex, generally well transmitted into the axilla. In five of the cases another murmur is also described at the pulmonary,

in three of these, this second murmur is probably hæmic in character for there is marked anæmia.

Typhoid fever may be taken as an example of a condition in which functional murmurs are extremely frequent, which contrasts strongly with anæmia. Here the more rapidly acting heart, the low tension pulse, the increased metabolism and evident intoxication of the system explain much more readily the strain on the cardiac system, of which the murmur gives evidence, than do the changes associated with a moderate anæmia. But, under such widely differing clinical circumstances, a common symptom makes one look for a common cause and the inference lies near, that in anæmia as in typhoid, a toxæmia rather than a hydræmia is at work, in the one case acting slowly and insidiously, in the other, suddenly, acutely, and poisoning rather than impoverishing the nerve centres. Other facts suggest this idea also. Everyone knows that one meets with systolic functional murmurs often in apparent health, and in 78 of these 466 cases, there is present neither anæmia nor fever, but often a condition which suggests some form of intoxication. Instances of such conditions included among these murmurs are: 43 diseases of the digestive system (including six cases of cirrhosis), gout, acute alcoholism, morphinism, etc.

Out of about 298 cases of typhoid examined, a pure systolic murmur was noted in 78, making something over 29 per cent.

In this disease as in all infectious fevers, an apical murmur always suggests the possibility of an acute endocarditis; this is however, rare; Osler states that he did not find it in any of his cases and that it was present in only 11 of the 2,000 Munich autopsies. Parenchymatous degeneration on the other hand is undoubtedly common, and yet though this is naturally often the main underlying cause for these murmurs, they often declare themselves functional in other ways, by disappearing during the active course of the disease.

Since the year 1896, minute daily records have been kept of the typhoid cases in the hospital. These "typhoid charts" reveal some interesting facts as regards the cardiac condition. When a murmur develops, although it frequently has a course parallel to the height of the fever, it often, too, appears and disappears quite irregularly without any apparent reference to this. In no condition of high continued fever are the variations in the cardiac condition more striking than in typhoid. The sounds vary in character and relative intensity; murmurs appear and disappear; signs of cardiac dilatation come and go, as the struggle between the reactive powers of the individual and the invading toxins of disease goes on in the organism.

The seemingly casual occurrence of these murmurs at the apex replacing those at the pulmonary and again a few days later giving place to them, differing too in no way from the basal murmurs in quality, makes one question Leube's statement that the hæmic murmur is always at the base and that a murmur at the apex is always due to a relative mitral insufficiency.

The transient murmurs of typhoid are best illustrated by a glance at two or three of the cases:

CASE I.—(Murmur corresponds with course of fever). A. B., admitted on 8th day of disease. High temperature until 25th day when defervescence began; normal temperature 41st day.

On admission, faint blowing systolic murmur at apex, not transmitted; louder murmur at pulmonary cartilage; faint murmur at aortic, accentuation of pulmonary 2nd sound. These conditions noted daily until 17th day when the basal murmur disappeared; that at the apex persisted; on the 24th day (commencing defervescence) this also disappeared. The heart was examined daily until the 62nd day and there was no recurrence of the murmur.

CASE II.—(Murmur ended with pyrexia but disappeared and reappeared again during its course.) C. D., admitted on 22nd day, temperature $105\frac{1}{2}^{\circ}$; high pyrexia until 42nd day; temperature slightly lower (102°) until 45th day, when defervescence began; temperature not normal until 95th day.

On entrance a blowing systolic murmur was heard at apex and pulmonary cartilage, noted for three days; on 27th day, no murmur at pulmonary nor at apex, but here lengthening of the 1st sound; on 33rd day, a faint blowing systolic murmur developed at apex, noted daily until 65th day when it disappeared; daily examination of the heart until 95th day revealed no return of murmur.

CASE III.—(Murmur at pulmonary cartilage during height of fever; interval with no murmurs; murmur developed at apex during convalescence). E. F., admitted on 27th day, defervescence began on 42nd day, temperature normal on 48th, no recrudescence.

On entrance, systolic murmur at pulmonary with pulmonary accentuation; this was noted every day until its disappearance on 36th day; on the 61st day (temperature normal; patient doing well in every way, still quiet in bed), a systolic murmur developed at the apex, heard as a rougher sound at the pulmonary, noted daily until the 69th day when it disappeared. On the 71st day (two days interval with daily note of no murmurs) murmurs were again heard at apex and pulmonary which persisted (daily note) until the 84th day. Patient discharged 87th day; pulmonary 2nd sound remained accentuated at exit.

Hysteria and functional nervous disorders.—In these, out of 62 murmurs 32 occurred in subjects who showed no anæmia; 14 of these murmurs occurred at the apex; eight at the pulmonary cartilage; five as double murmurs at both apex and base while one is heard at the aortic cartilage. Some of them bear all the characters of functional murmurs, being unaccompanied by other signs of cardiac disturbance, either enlargement or pulmonary accentuation. With no anæmia and no intoxication present, how are we to explain the temporary disturbance of the vasomotor system which the systolic murmur indicates? Is it possible that here, not poisoned nor impoverished, but disordered nerve centres are acting, and doing their part as inefficiently as do the higher inhibitory centres?

Lastly, with reference to the *nature of the sounds*, the following features may be of interest:

As regards the *site* of the murmur, it occurs at the apex in 170 cases, in 98 of which there is anæmia, in 72 none. It is at the pulmonary area in 126 cases, in 96 there is anæmia, in 30 no anæmia.

In 112 cases it is heard both at apex and base, sometimes with equal force, sometimes as a double murmur; in 79 of these there is anæmia, in 33 none.

In 48 cases the site is irregular (at the aortic or ensiform cartilages, etc.), 26 of these occur in anæmic and 22 in non-anæmic subjects.

In *character* the murmur is described as "soft, low, blowing," often "faint," sometimes "short" and "long," about 20 times; in three cases it is described as "musical," twice at the apex and once at the pulmonary area. It is described 42 times as "rough" or "harsh," and in all but 15 cases this applies to a murmur situated at the pulmonary cartilage.

Intensity is a point of some importance, for the murmur is in general low as opposed to the usually louder and harsher organic murmurs, but no hard and fast rule applies to anything about a functional murmur. "Loud" is applied to some 16 cases.

As regards *transmission*, murmurs heard at the apex are transmitted "towards the axilla" in 43 cases, and "into the axilla" in 73 cases. In 7 cases the murmur is described as heard "in the back" and "at the angle of the scapula." These cases are, 4 of chlorosis, 1 of lymphatic leukæmia, 1 of incipient exophthalmic goitre, and 1 of tuberculous meningitis. In none of these, except perhaps the latter, is there reason to suspect organic cardiac disease.

Pulmonary accentuation occurred in 191 cases, in 127 of which the pulmonary system was diseased. In about one-third of the cases, it was noted as "slight," more often it was present in anæmic subjects.

The *rhythm* of the functional murmur, with more special reference to the diastolic sound. Among the cases studied I have found 10 diastolic murmurs which I have not been able to reject as organic by any of the criteria I have used. They occur in the following diseases :

Chlorosis, splenic leukaemia, functional and cardiac disturbance, exophthalmic goitre, catarrhal jaundice, cerebral thrombosis, chronic bronchitis, and dementia.

So distinguished an authority as Strümpell states positively that he himself has observed a case of undoubted functional murmur which was diastolic in rhythm; and Sahli explains this (when occurring at the base) as a transmission of the *bruit de diable* from the neck. Leube, on the other hand, considers them so uncertain as to be better left aside in making any critical enquiry into the subject. He himself has never heard a diastolic murmur which he believes to be functional. Without discussing this disputed point, I quote a few of the cases:—

1. *Exophthalmic Goitre*: Blowing systolic murmur heard best at apex, heard also over præcordium and at aortic and pulmonary cartilages. Faint blowing *diastolic* murmur at pulmonary cartilage, heard down along left border of the sternum; pulmonary 2nd sound heard louder than aortic 2nd; dulness normal; apex beat normal position; 1st sound of heart heard at apex; pulse compressible.

2. *Phthisis*: Patient died 13 days after admission. Heart normal on entrance except for accentuated pulmonary 2nd sound, five days ante-mortem, systolic and *diastolic* murmurs were heard at 3rd right interspace, transmitted down right border of sternum; persisted until death.

3. *Splenic Leukæmia*: (Hæmoglobin 14 per cent.). Blowing systolic murmur at apex, transmitted to axilla; blowing systolic murmur at pulmonary transmitted upward; systolic and *diastolic* murmurs at aortic cartilage; pulmonary accentuation and 2nd sound at apex much accentuated; apex beat and dulness in left mammary line; pulse regular, tension low.

4. *Dementia*: Patient was a boy of 15, small and undeveloped; *diastolic* murmur at pulmonary cartilage; no enlargement of cardiac area or accentuation of pulmonary second sound.

Some *cardiac enlargement* was noted in 66 cases, and seemed gen-

erally to be consequent on a relative mitral insufficiency. In ten cases, relative dulness began at the right sternal border, in 30 cases it was noted at the midsternum.

General remarks: A functional murmur is usually, though not always, systolic in rhythm; while frequently at the base, it is very commonly situated at the apex: in the more severe degrees of anæmia or intoxication it is more common at the apex, in milder disturbances at the base. In intensity it is generally "low" and "faint"; in quality, "soft" and "blowing," especially when at the apex. Rough, harsh, functional murmurs are generally situated at the pulmonary cartilage. The murmur is often transmitted from the apex to the axilla, and, as due to a relative mitral insufficiency, may even be heard in the back. Moderate pulmonary accentuation is frequent. In those cases where the murmur is basal and appears to be accidental, it is generally associated with anæmia. Moderate enlargement of the cardiac area is fairly common, and points to a relative mitral insufficiency.

The cases studied illustrate especially the following points:

1 In cases of anæmia, pulmonary accentuation is often associated with a pure accidental murmur.

2. Functional murmurs frequently occur where there is neither anæmia nor fever. They are then often associated with some other condition suggesting intoxication.

3. Diastolic murmurs have been noted which do not appear to have an organic origin.

4. Although accidental murmurs are generally heard at the base and those of relative mitral insufficiency at the apex, accidental murmurs are probably sometimes heard at the apex; (as in moderate anæmias where the murmur may occur at the apex unaccompanied by pulmonary accentuation or cardiac enlargement and disappear after a short time; or in high fevers where a murmur at the apex is replaced after a few days by one at the pulmonary cartilage of the same character.) On the other hand; murmurs produced at the mitral valve are occasionally, though rarely, heard best at the pulmonary cartilage.

Two conditions which it may be quite impossible to distinguish from each other by physical signs are:

A functional murmur at the apex with signs of moderate dilatation (relative mitral insufficiency), and an organic mitral murmur with signs of compensatory change. A decision can often only be reached

by considering the patient's general condition and the *persistence* of the murmur. This last is the clinching point and is the final criterion to which uncertain cases must be brought. In plain terms, *we must wait to diagnose the murmur until it is no longer there to diagnose.*

In this short paper such a large number of case reports have necessarily been dealt with in the most superficial way. Many points,—such as the persistence of the first sound of the heart—have not even been mentioned; and there remain the 123 cases where the previous history or present condition suggests organic cardiac disease; a comparison of these with the 466 cases glanced at in this paper where the murmurs were all apparently functional, would be very interesting. But a closer study of a subject such as this, is better combined with work at the bedside. The examination of these cases yields results which are useful chiefly as a basis for further study, and which become valuable when the conclusions drawn from them are confirmed by the prolonged observation of individual cases by a single observer. I hope at some future date, through the continued kindness of the authorities of the Royal Victoria Hospital, to be able to make further use of the material before me in a more thorough investigation of the subject.

PUERPERAL SEPTICÆMIA.¹

BY

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Among those whom I have the honor of addressing this evening, there are a few who, although comparatively young, have still like myself, lived long enough to have been the contemporaries of that dreadful disease which we used to call *puerperal fever*. The remembrance of this multiform plague which, at times, seemed to cling exclusively to the clothes of one *accoucheur* in particular, I am sure, is still fresh in their memory. All the parturients with whom he would come in contact would be stricken by the disease, and with such deadly results that he would be compelled to give up obstetrical practice until time would allow of his getting rid of the virulent atmosphere which appeared to surround him individually.

The oldest among us have witnessed these terrific cases which used to kill in a few days, as they have also known those epidemics of erysipelas, hospital gangrene, as well as those wounds flooded with pus which we used to call "*laudable*," so proud were we to establish a distinction between it and the fetid sania which in every case was rightly considered of such a bad omen. It was the pre-antiseptic epoch, and at that time the true character of puerperal fever was enshrouded in the same deep darkness as all the other infectious diseases.

At the time, already very remote, when I began my medical studies, we were far from possessing the richness of means that clinical investigations afford us to-day. Wunderlich had not yet armed us with the thermometer which enables us to follow and register with such a precision the oscillations of animal heat during illness. *Tactus eruditus* and other phenomena would, however, easily permit us to ascertain the existence of fever. The cause of this fever was carefully looked for in every case, and generally it was found to be due to inflammatory action going on in some parts of the organism. At one time the lung was inflamed, at another the pleura, the peritoneum, the cellular tissue, and so on; the elevation of temperature was the consequence of that inflammation and the fever was called *symptomatic*. But in other cases, no organs would show sign of suffering, nowhere would the most careful examination detect the least inflammatory process, a certain amount of mere functional disturbance only would

accompany the sometimes considerable elevation of temperature of the body. In short, no appreciable anatomical lesions whatever could account for the fever which therefore was declared to be *essential*. Such were : scarlet fever, measles, variola, enteric fever, and at last, puerperal fever. The morbid phenomena which characterized these diseases were consigned to a special corner of the nosological frame and constituted a group to which were applied the denominations of infectious, virulent, zymotic affections. The etymology of these various names very well showed the tendency towards the right direction, and the terms virus, infection, ferments, seemed to fortell, as it were, the dawn of the greatest discovery of this century. Still the vagueness of those purely hypothetical conceptions brought but little satisfaction to the numerous observers deeply absorbed by the anatomical researches and who had at their disposal, means of investigations improving more and more every day. These indefatigable workers, digging with utmost eagerness the pathological tissues down to the last fibres, were incessantly in hope of finding in the ultimate revelations of post-mortem examinations the anatomical explanation of morbid phenomena, the etiology of which had escaped their predecessors. It is especially on the ground of puerperal fever that the conflict assumed the most gigantic proportions. Two opposed camps were in presence, and the combatants on either side made, at that time, the halls of scientific societies resound with the expression of their respective opinions. On one side puerperal fever was considered as a morbid entity, a disease "*sui generis*," produced by an invisible agent of an unknown nature, giving rise to manifestations, the explanation of which could not be found at the post mortem examination of the organs whose integrity would generally seem perfect. Those who fostered that opinion were called *Essentialists*. The others refused to accept the essentiality of puerperal fever. To them, there existed, after labour, a wound in the uterus. This wound, like any other traumatic lesion, remained exposed to inflammatory complications which would spread by continuity or contiguity of tissues up to the abdominal cavity, or end in the formation of pus which, absorbed by the blood-vessels or the lymphatics, would cause disorders in parts more or less remote from the initial point. And, they would add, if other observers had not found the presence of material lesions at the autopsy, it is because they did not know how to look for them, for they existed in every case and would account for the clinical manifestations offered during life. The latter were called "*Anatomists*," and what a masterly description have they not left us of the course and symptoms of puerperal fever ! They acknowledged three prin-

cipal forms of the disease : the first, characterized by pain and tumefaction of the appendages, appreciable by external palpation, cephalalgia, tympanites, diarrhœa ; all symptoms spontaneously terminating within five or twelve days. They were but mere puerperal disorders, simply due to an inflammation having its starting point in the uterine wound, and thence propagating more or less to the peritoneum or to the cellular tissue of the pelvis.

The second form would begin by a chill, fever, abdominal pain, spontaneous or on pressure. Then signs of biliousness would supervene, great thirst, altered features, meteorism, typhoid condition, sub-delirium, cold sweats, scanty and fetid lochiæ and often sudden death without agony. Here there existed lesions of the veins ; the uterine sinuses, pampiniform plexus, and ovarian veins contained pus. It was a purulent infection due to uterine phlebitis. This phlebitis would often extend to neighbouring veins, and then would appear *phlegmasia alba dolens*, followed by obliteration of the vessels. This group had received the name of "*puerperal phlebitis*."

Now, if we combine this latter form with the first, that is, given a puerperal phlebitis associated to peritoneal inflammation, if, besides, other symptoms of a more serious character supervene, such as sloughing of the genital parts, or especially hospital gangrene, then we would have the third form which was called, "*true puerperal fever*," offering the following symptoms : Fever, rapid pulse, cephalalgia, rigors, coated tongue, fetid lochiæ, meteorism, vomiting, extreme prostration, altered features, cerebral symptoms, ending in death with or without agony. In one word, it was purulent infection, complicated with peritonitis and gangrene.

As you see, gentlemen, the puerpera for the anatomist was but a patient bearing a large wound, and in their opinion, all the puerperal pathological phenomena were nothing else than mere complications originating on the site of placental insertion. Very well, but it was with regard to that uterine wound that there existed the missing link. What was the primordial cause which determined in that wound the modification from which all subsequent trouble would proceed ? The essentialists were keeping closer to the truth, and as early as 1718, Strother contended that puerperal fever was due to the etiological influence of atmospheric miasms causing the putridity of lochiæ. Nearer our time, Trousseau, in a flash of genius, expressed the idea that something specific was certainly added to the placental wound to produce the puerperal disturbance.

The modern doctrine, owing to the marvellous discoveries of the immortal Pasteur, has shed a light upon this chaos, and we are well

aware to-day that puerperal fever of former times is a more or less intense infection caused by the absorption through the genital organs of microscopical germs. These micro-organisms, by the mere fact of their presence, or the diffusion into the blood of their chemical products, poison the whole system, determining morbid phenomena, the form and gravity of which vary according to the nature of the pathogenic germs, their degree of virulence and the receptivity of the soil in which they develop.

I will spare you the chronological enumeration of the researches which, within the last twenty years, have permitted the numerous investigators to arrive at that conclusion. The important point for us to know is that it is to-day almost universally admitted that the principal factor which has to do with the origin of puerperal infection is the streptococcus pyogenes, the same organism which is found in erysipelas and phlegmonous abscesses. Generally it is it alone which is the cause of the whole trouble. Still, several observers have found it sometimes associated with the staphylococcus aureus, and even with the bacterium coli. In some cases, by exception, it proved to be absent and the staphylococcus or bacterium coli only were found, but then the puerperal disorders were greatly mitigated and spontaneously disappeared or yielded rapidly to ordinary therapeutic measures.

In almost every case these pathogenic germs come from without and are carried in, owing to insufficient antiseptic precautions before, during, or after labor. I say *almost every case* and not exclusively. I certainly do not believe in spontaneous generation, and puerperal septicæmia has always a heterogenous origin: but it would be erroneous to think that it cannot occur outside of contamination produced by the negligence or ignorance of the *accoucheur* or some of the attendants. Numerous observations have shown the possibility of an apparent auto-infection on a puerpera who, before confinement, carried microbes, dormant as it were, and awaiting but fortuitous and favourable circumstances to awaken from their torpor. For instance, often the cervix is the seat of old endocervicitis where the staphylococcus, the gonococcus and even the streptococcus having lost the greater part of their virulence, have been residing as it were in a latent condition. And again, old purulent collections may at times exist in or about the appendages without manifesting their presence until the day when the obstetrical traumatism resuscitates their nefarious power. The genital system of the woman being then placed by parturition in a special state of receptivity, becomes a soil favourable to their growth and further invasion.

However, I repeat it, in most cases it is by germs brought from without that infection takes place, whether these micro-organisms have found their way into the genital organs more or less anteriorly to the confinement, or whether they have been carried in during or after labor by the hands or instruments of the *accoucheur*. As long as the mucous membrane preserves its integrity, their entrance into the system does not take place, but we must not forget that there always exists in the uterus after delivery a door wide open, the spot laid bare by the expulsion of the placenta. Besides, it is of very rare occurrence that the traumatism of labor does not produce in the cervix or along the vaginal tract an erosion, a minute abrasion, perhaps imperceptible, but still sufficient to permit septic absorption. And when once these germs have found an entrance into the tissues, is there anything astonishing in the fact that their symptomatic manifestations vary in their form as well as in their intensity without it being necessary to attribute the varied clinical phenomena which we observe to micro-organisms of different nature? The greater or less severity of the disease, and the various clinical forms it presents are due to numerous causes which are easily accounted for. The modern conception of the microbic etiology of puerperal sepsis has brought no change whatever to the admirable clinical picture left us by the old masters; moreover, it gives us a satisfactory explanation of all the different pathological symptoms observed during puerperium. Only, here as well as in all other surgical traumatism, certain complications have almost totally disappeared and belong hereafter to the domain of history. Thanks to the discovery of antisepsis, those epidemics of erysipelas, those everlasting suppurations, and also those putrid and so rapidly fatal forms of puerperal fever are but very exceptionally met with in the hospitals and even in private practice. Still puerperal infection, to-day as formerly, shows itself in different forms which, outside of the degree of virulence possessed by the infecting agent and the individual resistance of the constitution, depend upon the anatomical lesions of the various tissues which are affected. Thus, to-day as before we must expect a less alarming symptomatic manifestation where septic absorption exhausts itself in a mere inflammation of the pelvic cellular tissue than when the morbid process spreads to the appendages or to the peritoneum. Should the vascular system, which irrigates the uterus and the neighbouring territories, participate in the infection, the clinical picture will be more gloomy still and, lastly, if these varied pathological conditions are associated, if above all, gangrene of the tissues takes place, oh! then the reaction of the organism will show itself in a most solemn and desperate manner.

If I offer these few remarks to your consideration, gentlemen, it is because I want to refute beforehand the opinion of those who might be tempted to make of the severest forms of puerperal septicæmia a morbid entity entirely different from the other less intense puerperal manifestations, trying to explain it by the hypothetical existence of a special and still unknown micro-organism.

But enough on this subject. I long to arrive at what must particularly interest us, I mean the preventive and curative treatment of puerperal septicæmia.

I confess, gentlemen, that I am a most fervent believer in the germ theory, and that I am thoroughly convinced of the truth of its teachings. Must I add that I believe with all my soul in the justness of the modern etiological conceptions of puerperal septicæmia. I earnestly believe that in order to ward off this disease, we must behave during an obstetrical case as we do in presence of all other surgical acts. We are bound to take before, during, and after labor all the usual antiseptic precautions which are now universally known, having been so often and everywhere repeated. The lying-in-hospitals of the United States give us, with this respect, an example deserving our most careful meditation, and it suffices to have had the good fortune of visiting some of them to form an idea of the perfection with which the attendants of these model institutions carry out the principles of asepsis and antisepsis in which they have the most absolute faith. There, they proceed to the conduct of a midwifery case exactly as if it were a major gynæcological operation, and should they be suddenly compelled to open the abdomen during labor, they would be thoroughly prepared to do it, the parturient: the assistants, the nurses, the *accoucheur* having been entirely aseptized beforehand.

It would be utterly ridiculous to pretend that we ought to surround ourselves with similar precautions in ordinary practice; this ideal condition can be realized but in institutions especially designed for obstetrical purposes, it is nevertheless our duty to try and do all we can with the means at our disposal. It is needless to speak of the preparation of the bed, the bedroom or the surroundings of the parturient; these things usually escape our control and generally cannot be put in the favourable condition required by all thoroughly aseptic confinement. But what we must never forget is to see, at least, that the external genital organs of the woman are carefully cleansed with soap and water and afterwards bathed with some antiseptic solution before any digital examination is made.

Is it necessary to use vaginal douches before labor?

We do it no more at the Ottawa Maternity Hospital, unless the

woman is affected with leucorrhœal discharge somewhat suspicious by its abundance or its character. Such has also been the practice of several *accoucheurs* who lately have thought best to discard those antepartum vaginal injections for the following reasons: They contend that physiological vaginal secretions possess germicidal properties upon the micro-organisms concealed in the vaginal tract. The douche in diluting and carrying away these salutary secretions would leave the soil unarmed against the microbes hereafter masters of the place. Kronig has lately published on that question very interesting statistics. He demonstrated that puerperal complications have been observed just as frequently on women who had received antepartum vaginal injections as on those who had not been previously douched. I will spare you the relation of his numerous experiments and you can take his opinion for what it is worth; however, according to his figures, it remains indisputable that these injections are, at the least, unnecessary when the vaginal cavity is in its physiological condition. Still, personally, I humbly confess that I fail to understand how antiseptic solutions, such as for instance a solution of corrosive sublimate, could possess a less valuable germicidal action than that attributed to the vaginal secretions which they expel in taking their place.

It is during or after labor that the puerpera is ordinarily infected, and in the majority of cases, contamination takes place through the ignorance of some of the attendants or the carelessness of the *accoucheur* himself. Labor, although a physiological phenomenon, must be likened to a real surgical traumatism; presently, there will be in the uterus a vast surgical wound near which none must approach without previously taking the most careful precautions.

No one, I am sure, would dream of attending or assisting at the opening of the abdominal cavity after having been in more or less immediate contact with an infectious disease, or even any case of supuration whatever, and still less after taking part in a post-mortem examination. Still, how many physicians, overwrought by an extensive practice either forget or neglect to pay attention to these elementary notions! The mere mention of this fact is sufficient to indicate the duties we have to fulfil.

But aside from these general indications, I must particularly insist upon the necessity of submitting the hands which will be used in making vaginal examinations, to a careful cleansing and to a sterilization as complete as possible. How many errors are not daily committed in this respect, especially by those who, little conversant with the usual surgical practices, underrate the importance of watching over the faithful execution of the most minute details! The super-

ficial ablutions used by a certain number are entirely insufficient from an aseptic standpoint ; the hands may be clean " socially speaking," but *surgically*, they are far from being pure. To dislodge the germs which have sought refuge in the folds of the epidermis and under the nails, more than a simple *lick and a promise* is required, and without conscientious and prolonged scrubbing, the action of the strongest antiseptics themselves is totally delusive, because these antiseptics cannot come in contact then with the germs protected by the layer of dust and grease in which they are imbedded. In order to show how this act of thoroughly disinfecting the hands, although apparently simple, is nevertheless difficult to realize, allow me to cite the experiments made by Fürbringer ; they will permit your drawing the most practical and salutary conclusions.

The author begged several of his friends to sterilize their hands according to their own ordinary process and then to immerse them in a culture-medium.

Dr. A. — Nails of medium length. Scrapes them with matches. Washes his hands in a 3 per cent. solution of carbolic acid and wipes them lightly. Scrapings from under the nails thrown in the culture-medium. Result, 3,000 colonies.

Dr. B. — Nails longer. Cleanses them with a knife. Washes his hands with soap and water, scrubs them with sublimate solution and then wipes them. Duration of the process, 4 minutes. Result, 2,000 colonies.

Dr. C. — Same method, but nails very short. Result, 2 colonies.

Fürbringer himself : Nails, medium length. Cleansed with a knife. Washing with soap and warm water during five minutes ; washes them afterwards during the same length of time with sublimate solution. Result, culture medium remains sterile.

The left hand of another was simply washed with lukewarm water, then two fingers were washed with carbolized water, and the three others with a sublimate solution. Result, colonies appeared by hundreds.

The right hand was bathed one quarter of an hour in *warm water*, two fingers washed in carbolized water and the others in sublimate. Result, culture-medium sterile.

In comparing these various experiments, it is easy to see that the number of germs developed in the culture-medium increases with the length of the nails, and also, that the results obtained with antiseptics are not to be compared with the far better results obtained by vigorous scrubbing with soap and warm water.

May I now be allowed to suggest the following method of sterili-

zation which I have adopted, before beginning any surgical operation :

1. The nails are cut short and cleaned, when dry, with a knife or any instrument suitable for that purpose.
2. The hands are scrubbed during five minutes in warm water frequently changed and with Johnson's fluid soap, which, owing to the ether it contains, helps to dissolve the fatty substances which cover the epidermis and gather under the nails.
3. Hands then thoroughly bathed in alcohol and rinsed in sterilized water.
4. Finally, they are immersed for one minute in a solution of sublimate. I beg your pardon for laying so much stress upon these details, irksome as they may appear to some, but which I persist in considering of the greatest importance.

Now come the forceps, which may also claim a good deal of the many disorders observed during puerperium. I do not mean their awkward, irregular or untimely application ; this goes without saying, but I allude to the lack of sterilization, which is a fault more frequently committed than some seem to think. Every time they have been used, these instruments should be disinfected by dipping them during at least five minutes in boiling water, wiping them dry with a sterilized towel, in which they remain wrapped up until the next application. It is an easy and simple thing to do and I generally employ, to this effect, one of those long and narrow vessels used for boiling fish and which are found in all hardware stores.

A third source of infection to which I want to call your attention is the retention of the secundines during the third stage of labor. I do not mean the retention of parts of the placenta itself, but some portion of the membranes which, remaining in the uterus, become infected and are often the starting point of septicæmia. I would not have made this observation, which may seem puerile, had I not witnessed this accident in the hands of even skilful physicians. The placenta is often suddenly expelled, by the pressure made upon the fundus of the uterus or merely by contractions of that organ. Thus, the secundines are turned up like an umbrella by the wind, becoming slender and very fragile. They may unexpectedly tear up, a considerable portion being left behind. This possible occurrence should always be carefully looked for, the placenta being grasped and twisted upon itself in order to make a rope of the membranes, which, without the least traction, will slowly slide down and out as if by their own weight.

I shall have ended what I intended to say about the prophylaxis of puerperal infection when I recommend you to supply the obstetrical bag with the following articles: A bottle of catgut, a few strands of silk-worm gut and needles for the repair of laceration, a few strips

of iodoform gauze, some creolin, Johnson's fluid soap, a nail brush and a small package of sterilized absorbent cotton. You may add, if you like, a Bozeman's sound or any other suitable instrument for intra-uterine douches; however, except when the hand has been introduced into the uterus, as in cases of turning or adherent placenta, I think it entirely unnecessary to make intra-uterine irrigation after labor. But what must be most carefully looked after is the laceration of the pelvic floor, however small the lesion may be. In every case, these doors opened to septic invasion must be closed as soon as possible. The repair of a cervical laceration is often difficult to perform for one who is not in the habit of doing this operation and who, therefore, is certainly excusable in not attempting what he is not in a position to do in a suitable manner, but the immediate suture of a vaginal or perineal laceration is within the reach of everybody; two or three silkworm gut sutures being all that is required, provided care is taken to protect the line of reunion with a small strip of iodoform gauze which shall be renewed every twenty-four hours for a few days.

In spite of all the precautions which may have been taken, and all the more if they should have been neglected, puerperal septicæmia will nevertheless occur and far too often, alas! I refer to your own experience. What shall we do then?

It is not my intention to dwell upon the symptoms and the course of all the complications which may happen during the puerperium, nor to study in detail the curative treatment which must be opposed to these various pathological conditions. I shall confine myself to mention briefly the symptoms which announce the commencement of the infection, indicating the chief therapeutic means whose efficacy we have been taught by experience, provided they have been employed in the very first days of the disease. We must remember, gentlemen, that it is of the utmost importance that we act promptly without the least delay at the very bursting out of the fire. In a few days it may be too late; the conflagration will have become beyond control, and we shall then only be reduced to a general save him who can. Therefore, I shall intentionally leave aside the varied symptomatic manifestations which may supervene later on, such as peritonitis, phlebitis, pelvic cellulitis, salpingitis, and so forth. Whatever may be the form assumed later on by puerperal sepsis, we must bear in mind that the etiological starting point is the same in every case, that is: absorption of pathogenic germs rendered possible by a solution of continuity in the genital system. The initial symptoms differ very little at the outset and it is then that we must act, that is, at the very moment when the infection, still localized, is within reach of the means

at our disposal to check it at its origin. We must, therefore, be vigilant and be able to recognize its earliest manifestations.

It is generally about the second or the third day after delivery that the declaration of war takes place, and the first gun-shot fired by the organism is the elevation of temperature. The enemy is still far, it is true, but woe to the one who, in every case of puerperium, does not listen with an attentive ear, in order to catch these still distant reports. Every night and morning after labor, temperature must be taken by the nurse or the physician himself, whatever may be the apparent good condition of the patient. Should the thermometer indicate the least increase in the temperature, then is the time to prepare our means of defence and try at once and discover the issues through which the foe may have penetrated. There is fever; be sure, then, that there is septic absorption somewhere. We must guard against any false security and I hope that no one among you is still believing in the old pretended milk-fever. At the most, might we be justified to a certain extent, in incriminating in some cases, stercoræmia due to a more or less prolonged constipation. At all events, it is but wise to prescribe some laxative which will soon clear the scene. In almost every case of elevation of temperature at the beginning of the puerperal state, septic absorption has taken place either in the placental wound or along the genital tract, through some abrasions which, owing to their exiguity, often escape the most careful search. As soon as fever appears, an antiseptic vaginal douche should be given, and if some suspicious spot is detected on the pelvic floor, it must be touched lightly with some caustic substance. I generally use in these cases a solution of one part of creosote in three of glycerine, leaving afterwards in contact with the mucous membrane, a strip of iodoform gauze; the next day, very often, the temperature falls to normal. But should we fail to discover anything suspicious along the vagina and should the temperature continue to rise, in spite of repeated antiseptic injections, then it is a sign that the enemy is proceeding forward more threateningly. To the artillery it has added its skirmishers and very soon its cavalry, followed later on by a few columns of infantry, and if we do not hasten to check its invading progress, we shall soon be overcome, and a pitched battle against its total forces means, for us, a sure defeat. Therefore, should frequency of the pulse increase while temperature continues to rise or even remains stationary, but above normal; if the conditions of the tongue indicate gastric disturbance, whether there has been a chill or not, and whether the abdomen shows or not distention or tenderness, let the lochiæ be sweet or fetid, we must at once use intra-uterine douches. But then we must bear in mind that the

instrument will get in contact with an open wound and the antiseptic precautions must be carried out with the utmost care. The hands are carefully disinfected, the vagina cleansed and irrigated with a creolin solution. A Bozeman's sound, thoroughly sterilized, is introduced in the uterus and the uterine cavity is washed out with creolin, taking care to hold the reservoir not more than one or two feet above the patient's bed.

If the next day the symptoms, instead of amending, become more intense, if the temperature keeps on increasing, reaching 100° or more, if the pulse beats 115, 120, whether the lochiæ are fetid or not, the uterus must be curetted. But before proceeding any further, I want to say one word with regard to the fetor of lochiæ. It is an error to believe that the offensive character of puerperal vaginal discharge is an ordinary sign of septicæmia. It is erroneous also to attribute to this sign a gravity which it does not always possess, and finally more erroneous still to think that fetor of lochiæ is the exclusive indication of post-partum curettage. Many, many cases go through all their phases and even kill without the lochial discharge offering the least odor, and others terminate favorably and often without having presented any other symptoms than precisely that fetor, accompanied with some elevation of temperature and perhaps an increased frequency of the pulse. The offensive odor detected in the lochial discharge, especially during the first days of puerperium, generally means that saprophytes, that is, non-pathogenic germs, have found access into the uterus and produced the decomposition of the secretions or of some remnants of membranes forgotten after delivery. Of course this sapræmia must not be entirely trifled with, owing to the toxins produced and the fever which is the consequence of their presence in the system, and above all, on account of the favorable conditions impressed on the soil which then becomes more suitable to the growth of pathogenic germs which will engender septicæmia. Fetor of the lochiæ being a sign of the presence of decomposing material in the uterus, surely constitutes a new indication for curettage, but it is not a *sine quâ non* of the necessity of this operation, and whether it exists or not, and I insist upon that point, as soon as progressive or persistent elevation of temperature, acceleration of the pulse, gastric disturbance, cephalalgia, etc., etc., have convinced us of the beginning of septic absorption, if these symptoms have resisted the influence of intra-uterine irrigation, we must at once curette the uterus.

To do this operation in a satisfactory manner I prefer anæsthetizing the patient, although it is not absolutely necessary: Pinard, at the Baudelocque Clinique, never does it. He says that curetting can be

done with hardly any pain, if care be taken to hold horizontally and not vertically the vulsellum with which the uterus is drawn down, and always to avoid bringing the instrument in contact with the superior part of the vulva. He contends that the pressure of the vulsellum upon the soft and tender tissues situated at the entrance of the vagina is what generally causes the greatest pain. The hands are disinfected, the instruments sterilized, the vagina irrigated and finally an intra-uterine douche given. The curette must have a long handle and a large dull wire loop. The fundus is first carefully scraped, then the lateral, and at last the anterior and posterior walls of the uterus. Two dangers must be avoided in performing this operation, to go too far or not far enough. During puerperium, and after miscarriage, we must always bear in mind that the uterine tissue is exceedingly soft, and should the instrument be carelessly pushed forward with too much force, it is liable to perforate the organ. This has occurred already and the woman died. On the other hand, should we proceed with too great timidity, in the fear of perforating the uterine walls, the fundus may not be reached and the results will be null. I was inquiring one day from a physician if he thought it possible that, after an abortion or normal labor, a considerable portion of the placenta could be left behind in the uterus after curetting. He answered that a similar accident could not happen but in the hands of an operator who did not know his business. I believe he was entirely wrong and such a thing may occur even with a very attentive operator, if he is not aware of what is liable to happen in certain cases. After miscarriage or normal labor, the uterus sometimes is ante or retro-flected. A portion of the placenta may remain adherent to the fundus and shut out of the rest of the cavity by a kind of hour-glass contraction. The constricting ring constitutes a sort of resisting ceiling which the curette may scrape as well as the rest of the lower segment. The operator will not dare force a resistance into what he believes to be the fundus of the uterus itself, fearing to produce a perforation. I can assure you that, in some cases, this error is more easily committed [than one would think, still, I fancy that it suffices to remember the possibility of its occurrence to avoid it. We must always carefully find our way with the uterine sound if necessary, the free hand being at the same time, applied to the fundus through the abdominal walls. After curetting, another intra-uterine irrigation is given to carry out the clots and debris which might have escaped the curette, and the whole cavity of the uterus is to be touched with an applicator wound with a piece of absorbent cotton soaked in a solution of creosote in glycerine. Finally a

strip of iodoform gauze is carried up to the fundus and removed the next day.

Now, I imagine that I hear buzzing around my ears a multitude of voices whispering : “ But we have done all those things ; we have given intra-uterine douches, we have curetted and still our patients became worse and worse and finally died.”

I know it, and I think I can point out some of the causes of our failure. Let us examine our conscience. The majority of *accoucheurs* practice amidst what very frequently is far from being all that is desirable with regard to hygiene and perhaps cleanliness. Are we sure that some fault has not been committed against strict asepsis, before, during or after curetting ? Have all the requisite antiseptic precautions been taken in the act of disinfecting our hands ? After washing them, as I have seen it done, perhaps we have wiped them conscientiously with the towel, very clean I believe it, but still covered with germs, that was tendered us by some graceful attendant. And our instruments : the vulsellum, the sound, the curette, the nozzle of the irrigator, were they always properly sterilized ? Have they not been, unknown to us, in contact with some non-sterilized objects before they were introduced in the genital tract ? Have we not forgotten to give a vaginal douche before using the curette which then in traversing the vagina, may have carried into the uterus germs which had not yet found entrance to that organ ?

How long after labor or the beginning of the symptoms have we made up our mind to act ? Were we not too late, and when, therefore, the infection had ceased to be localized and had become systemic ? And who knows, perhaps, did we perform curetting, trying to reach in the uterus, a foe which was encamped elsewhere, in a cervical or vaginal tear for instance.

At last, I grant that we have fulfilled all the conditions required by a thorough aseptic curetting, which besides was correctly indicated by the intra-uterine localization of the disease ; we have not omitted the previous vaginal douches and uterine irrigation ; the cavity has been carefully swabbed with creosote and glycerine, a strip of gauze has been left *in situ*. The next day fever persisted, or the temperature reached a higher degree still, all the symptoms seemed aggravated and we stopped there. It remains to say what I think we should do in this occurrence.

1. If, after curetting and removing the uterine gauze, the next day the temperature falls and the symptoms decrease, there is generally nothing else to do and the patient will soon get well.

2. Should fever persist and the other symptoms remain what they

were the day before, but without aggravation, then intra-uterine irrigation should be done twice daily with creoline, permanganate of potash, sublimate or carbolised water.

3. If the patient gets worse, if the temperature reaches the next day a higher degree than before the operation, then we must repeat the curetting.

4. At last, if after the second curetting the results are nil and the disease continues its course, it is useless to insist upon the local treatment; the infection, in spite of us, has spread abroad, the whole system is infected and the prognosis has become very gloomy indeed. We are reduced to the means at our disposal to relieve special symptoms, and above all, to strengthen the organism and help it to resist the general intoxication which we could not prevent. At the head of the list, I will mention alcohol, wine and other stimulants. Quinine may be administered by those who have confidence in it; ice-bags on the abdomen if the symptoms of peritonitis seem prominent; subcutaneous injections of normal salt solution which, of late, have appeared to possess an effect considered by some as almost specific; and, at last, hypodermic administration of Marmorek's antistreptococcic serum, which has just arrived full of the most brilliant promises.

Since the measures just enumerated are supposed to have some therapeutic influence upon confirmed systemic infection, why not, may I ask, gentlemen, why not use them all, simultaneously with the local treatment, at the very onset of the affection? Why not, after curetting, for instance, at once prescribe stimulants, tonics, quinine and, above all, antistreptococcic serum? I know perfectly well that there exists, as I have already said, infections where the staphylococcus and even bacterium coli commune are alone at the bottom of the trouble, but we know also that it is the streptococcus which is the etiological factor of the serious forms of puerperal septicæmia, and, every day, new observations are brought forward showing the beneficial influence of Marmorek's serum upon the infections produced by this micro-organism. Why not, then, attack the enemy at the very moment when we suspect its presence and before its growth has caused irreparable disorders in the whole system?

CONCLUSION.

Puerperal septicæmia is an infectious disease caused by the absorption of pathogenic germs, usually the streptococcus pyogenes, rendered possible owing to a lesion produced along the genital tract by the obstetrical traumatism.

Almost in every case the germs come from without and are brought into the genital organs before, during or after labor.

Whatever may be the form and intensity of further clinical manifestations during puerperium, the disease is always localized at the beginning and liable to be reached and checked by surgical means at our disposal.

The first symptoms generally appear within thirty-six hours after labor and are characterized by elevation of temperature, frequency of pulse, cephalalgia, insomnia and more or less abdominal tenderness.

The preventive treatment consists in having the uterus thoroughly empty after delivery and in surrounding ourselves before, during and after labor with the most scrupulous antiseptic precautions, endeavoring also to detect and immediately treat the least solution of continuity along the vaginal tract.

The curative treatment must be employed at the very onset of the symptoms and consists in vaginal antiseptic douches, successively followed, should there be no improvement in the symptoms, by intra-uterine irrigation and a single or repeated curettage of the uterus.

Later on, if we have been called too late or if we have neglected to intervene opportunely, curetting and antiseptic cleaning of the uterine cavity may be tried, but the results are then doubtful. Infection has become totally systemic, general therapeutic measures must be resorted to, the prominent indication being to sustain the organism in its struggle against the effects of septic absorption. The treatment which must be directed against the various complications arising then in the different organs, such as peritonitis, pelvic abscess, phlebitis, cellulitis, being usually the same as the treatment required by the surgical affections of these organs outside of puerperium.

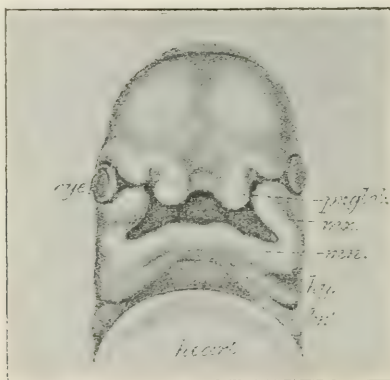
A LECTURE ON THE CAUSES AND TREATMENT OF HARE-LIP DELIVERED IN THE POST-GRADUATE COURSE, JUNE, 1898.

BY

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GENTLEMEN:—Before describing the treatment of the deformity which I am to speak of to-night, I should like to give you a short account of the development of the face, for all the congenital deformities met with are due to an arrest of this development at an early period of foetal life. A study of embryology is of great assistance to the surgeon in enabling him to account for many of the congenital conditions he not infrequently meets with.



Pr. Glob.—Globular extremity of the mesial nasal process.

Max.—Maxillaary arch.

Mn.—Mandibular arch.

Hy.—Hyoidean arch.

Br.—First branchial arch.

Development.—At a very early period of foetal life a series of clefts (branchial) appear on the side of the cephalic extremity, separated by rods of tissue called *branchial* or *gill arches*. The clefts communicate with the alimentary canal. The first branchial cleft is between the mandibular and hyoid arches. The mandibular arch which is afterwards developed largely into bone is divided into the superior and inferior maxillary portions. The two sides of the inferior maxillary portion early unite to form the lower jaw, but interposed between the two superior maxillary portions is the fronto-nasal pro-

cess. The space between the superior and inferior maxillary portions is called the buccal cleft. This is closed early except where the aperture remains for the mouth which is larger or smaller according as the cleft is more (macrostoma) or less (microstoma) closed. Sometimes the buccal cleft remains open from ear to ear. Now as to the nasal processes, these are divided into *mesial* and *lateral*; the mesial processes are united at their base by a depressed median part the *fronto-nasal process*, but below they are separated and each ends in a globular process (diagram and slides exhibited). These nasal processes, as development proceeds, extend backwards and along the embryonic roof of the mouth forming the nasal laminae. Eventually, the nasal processes coalesce in the middle line and form the intermaxillary process and the middle part of the upper lip, the depression between forms the septum of the nose and by a coalescence of the nasal laminae the rest of the nasal septum is formed. In rodents the notch between the globular processes persists and there is a fissure leading through the upper lip to the mouth. Above the depression is a triangular space forming an angle with it, this forms the tip of the nose and the triangular surface above it, the bridge. The lateral nasal processes form the *alae nasi*, these are not so prominent as the mesial. Between the lateral nasal processes and the maxillary process the lachrymal groove passes from the eye to the nose. Where the maxillary process of one side does not coalesce with the globular process then single hare-lip results, and if the union fails in the bony part as well, cleft palate is then seen. When both maxillary processes fail to unite with the globular processes, double hare-lip results, in this case the cleft usually goes through the line of union between the intermaxillary and superior maxillary bones. The middle part of the lip thus floats free and has attached to it the two intermaxillary bones, and is itself hanging from the septum of the nose. A failure of the two globular processes to unite is very rare though from time to time cases are reported. The mesial or septal part of the nose is developed from the junction of the globular processes. The septum is at first broad and depressed and the nostrils are widely separated, as seen in the lower races of mankind and monkeys.

The median union of the palate is completed about the 10th week of foetal life and the globular processes unite with the maxillary also very early, the incisor foramen only remains to mark the junction of these structures. The fact that the arrest of union of these processes results in hare-lip and that the union takes place so early, rather discredits the many stories one hears of hare-lip and other deformities being produced by maternal impressions. In many cases the tenden-

cies to such deformities runs in families and it is not uncommon for two children in one family to suffer from hare-lip and cleft palate.

Hare-lip then is a congenital affection and often is due to heredity. There are various forms of this deformity :

1. Simplest, merely a notch in the red edge of the lip.
2. Through the soft parts only and not going through to the nostril.
3. The cleft through the lip and nostril and accompanied by cleft palate.
4. Double hare-lip, with a floating intermaxillary bone and cleft palate, occurs in $\frac{1}{10}$ of all cases.

There are other forms of deformity connected with arrest of development of face, such as enlargement of mouth, a persistence of the lachrymal groove, &c. (Slides shown of these deformities.)

Single hare-lip is usually on the left side, and is always to one side in the line of the junction of the intermaxillary with the maxillary bone. The child who suffers from this deformity, as a rule, cannot suck and has to be fed with a spoon. The mother's milk should be drawn and used as food for the child. Some advocate injecting the milk into the pharynx with a glass syringe, to which is attached a piece of rubber tubing. Sometimes a stoppered bottle with a large teat, having the aperture below, is useful. Rubbing the child with codliver oil or olive oil if it is puny, may help to keep it in condition until old enough for operation. Artificial foods should not be given unless under dire necessity. The child should be kept warm in flannel.

Best Age for Operation.—This depends on the condition of the child and the character of the deformity ; should the deformity involve only the soft parts and the child be healthy, operate at once for the mother's sake and in order that the child may suckle. In simple cases the earlier the operation the better. The only danger in early operations is from hæmorrhage, young children do not stand the loss of blood well. On the other hand they soon make up lost blood. Should the child be weakly, or the fissure be double and extend through the hard parts, then the operation ought to be postponed some weeks or even months. From six weeks to three months is probably the proper time for operating. I prefer the age of six weeks, this is well before dentition has commenced. Some advise waiting in the difficult cases until the child is weaned, but this is keeping a deformity before the family too long, and furthermore it renders the success of the operation more difficult.

Operation.—The number of operations devised for the relief of this deformity are many and varied. The ingenuity of surgeons is taxed

more by these plastic operations than by any others, and the number of methods is only equalled by the great variety of procedures advocated by the gynaecologist in sewing up the abdominal wound. Chloroform is the best anæsthetic in these cases. The child should be wrapped in a sheet or large towel, so that the arms may be confined, and then held in the arms of a strong nurse. A good light is essential. Sitting in front of the patient, the operator should first cut through the mucous membrane attaching the lip to the gum, and freely separate it so that the lips hang loosely; the edges of the cleft are now freely pared by using a narrow-bladed knife and transfixing the edge of the cleft well up to the nostril, the flap is cut free above but below it is left on each side attached to the edge. As the two edges of the cleft are seldom the same length, one being usually distinctly longer than the other, on the longer side the soft parts should be more freely freshened; both flaps should be cut as far as the red line of the lips. Some advise cutting the flap of the shorter side quite away and only leaving the long one, and then bringing this flap across the middle line to fill the deficiency of the shorter side. Any redundancy can be cut off without trouble. It is my custom not to separate the flaps from the edges of the cleft below until several sutures have been placed in the lip above and the fastened edges of the cleft accurately adjusted near the nose. Now the paring from the shorter side is cut away and more or less, as occasion requires, of the tissue at the red portion of the lip removed, the flap of the long side is brought over as before and adjusted as accurately as possible. By this means there is less hæmorrhage and no mistake of taking too much or too little away is made. Of course, during the operation an assistant compresses the sides of the cleft with his fingers, and thus loss of blood is prevented. Should any blood get into the mouth it must be at once removed with sponges on handles. Now as to sutures: formerly wire and hare-lip pins were always used. At present we employ nothing but silk-worm gut and horse hair. For years I have used nothing else and with the best results. Care should be taken not to go through the lip whilst suturing, but to dip down to the mucous membrane only; the stitches should range on each side at least one-eighth of an inch from the edge. It has always been my custom, if the sutures have not been satisfactorily placed or seem to pull too much, or if perhaps there is a slight unevenness, to immediately take them out and re-introduce them. A little painstaking at this step of the operation is worth a good deal. After the main sutures of silkworm gut are placed, intermediate ones of horse hair may be employed, and afterwards the lip everted and the mucous membrane

sutured in the mouth, by this means the continuity of the surface is preserved and septic matter is prevented from entering the wound from the mouth. To recapitulate then. The most important points to be observed in the operation are :

1. Freeing the lip from the gum.
2. A free sacrifice of the edge of the cleft.
3. Accurate apposition of the parts.

The dressing should be simple. I usually apply an antiseptic paint (made of iodoform, resin, oil and alcohol) put on a piece of lint or cotton and nothing more. If the usual cheek straps are applied to preserve tension, they should be made of diachylon plaster, which is less irritating than the rubber adhesive, and the cheek parts cut broader than the part running across the lip, they should interlace in the middle line, the cheeks being well pulled forward. Before operation it is very important to know that the child has not been exposed to any fevers, as measles, or scarlatina. This is one cause of failure. Another is the inordinate crying of the child, and also the too early removal of the stitches. Sepsis, of course, is the great cause of failure and this is most likely to occur in badly nourished infants with poor resisting powers.

It is very important that sutures should not be removed too soon. In the old days of hare-lip pins they were removed in from 24 to 48 hours, because if left longer they would cut through the soft tissues of the infant's lip. Now we commonly leave silkworm gut in from 6 to 10 days. Should primary union not occur, wait until the inflammatory action has subsided and then freshen the edges and bring them together. Union now almost always occurs, because the parts have become, so to speak, immune. After the operation the child should be closely looked after. There is often great difficulty in breathing through the nostrils owing to tension on the upper lip and compression of the nostrils, and rubber tubes introduced are often a great aid and prevents collapse of the nostrils. After a time the parts get eased and the child will breathe easily through its nostrils.

The operation I have already described is that for single hare-lip. Double hare-lip is less common and must be somewhat differently dealt with.

Where there is no projecting intermaxillary process, the operation is not difficult, for then all the mucous membrane from the central portion is cut away and the flaps taken from the sides of the cleft as in single hare-lip. The central portion is sutured on each side to the lateral clefts and the lateral flaps run across to meet each other below the central portion, the lower part of which is freshened. What is in

excess is cut away. Sometimes the central portion may be cut into the shape of a V and the lateral flaps adjusted to it.

In those cases, however, where the intermaxillary bone projects the case is rendered much more difficult. In some cases, such as where the bone grows from the tip of the nose it must be sacrificed, but usually it can be broken back and forced into the cleft. Sometimes it is necessary to pare the edges of the gums, and I have been obliged in some cases to keep the bone in position with wire or silk sutures. It has been objected that the incisor teeth which belong to this premaxillary portion grow in crooked, if so they can be afterwards straightened by a dentist, or the teeth may be pulled out. It is also objected that the retention of the intermaxillary keeps open the palatal cleft. Always try and save the intermaxillary bone and so prevent a gap in the solid jaw. In cases where I have had to remove this bone, however, there was remarkably little deformity. Sometimes there is a double hare-lip and only a single cleft in the bone. In such cases the bony cleft of one side projects and has to be forced back with the thumb. In severe cases of operation in very weak infants where much paring has to be done, and the bleeding is excessive, the final stages of the operation may have to be postponed until recovery from shock takes place. In very young children bleeding is a factor which must be considered. (The different methods of operating were then described, such as Malgaigne's, Nelatons, Mirault's, Giralde's, Rose's and many others. All were illustrated by lantern slides.)

CLINICAL REMARKS ON THREE CASES OF DIFFERENT
VARIETIES OF NUCLEAR PARALYSIS—BEING THE
SUBSTANCE OF TWO CLINICAL LECTURES DELIV-
ERED IN THE ROYAL VICTORIA HOSPITAL,
MONTREAL, DURING DECEMBER, 1898.

BY

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CASE I.

Chronic Progressive Ophthalmoplegia Externa.

The patient before you entered the Ophthalmological Department some time ago, and through Dr. Buller's kindness he was transferred to the Medical Department.

He came complaining of double vision, which he says has troubled him at intervals for nearly three years. The intervals of freedom varied much in duration, from days to months. For some time he was annoyed with drooping of the right upper eyelid. He is a fairly well-developed, healthy looking man, 36 years of age, and is able to carry on his work, which is that of a machinist. Sixteen years ago he had a chancre which was followed by a rash over his body. He has used both alcohol and tobacco in excess. He makes no complaint of any pain in the head, nor does percussion over the scalp elicit any pain or tenderness.

With the exception of the ocular paralysis nothing abnormal is noticeable.

Dr. Buller found, when he first examined him some weeks ago, a nearly complete ophthalmoplegia externa. The inferior recti still retained some power, especially that of the right eyeball.

Vision of right eye $\frac{6}{12}$ —L. $\frac{6}{6}$.

At present it will be noticed the paralytic state of the ocular muscles remains the same.

All the structures supplied by the 3rd nerve are paralyzed, except the inferior recti, the levator palpebræ and the pupillary fibres. There is an appreciable difference between the right and left upper lids, the former presenting a slight droop, while there is complete power over the left lid. He is able to accommodate, but there is

diminution of the normal contraction to light. The external recti and the superior oblique are almost completely paralyzed.

The distribution of the paralysis renders it almost certain that the morbid process is situated in the nuclei of origin and not in the root fibres or in the nerves in their course. The involvement of certain parts of the 3rd, while others have escaped, cannot be readily explained in any other way.

The third nerve arises from a series of nuclei, the most anterior of which presides over the mechanism of accommodation, while behind this we have the nucleus which has to do with the contraction to light. The two nuclei are near and form what is called the anterior group of third nerve nuclei.

Whether there are separate nuclei for each external muscle supplied by the 3rd, is a question. Very exact descriptions of such are usually described in the text-books, since Kahler and Pick published their observations. We, however, have no anatomical proof that each muscle has its own definite nucleus. All that can be said is that there is a posterior group of nuclei belonging to the 3rd nerve, but in our present state of knowledge these cannot be arranged in a definite order. In close proximity to the posterior group of the 3rd nerve nuclei, we have the nucleus for the fourth nerve, and still further back the nuclei for the 6th nerve, both of which are here involved.

We have bilateral disease of the nuclei of the fourth, sixth, and those nuclei of the third which supply the external muscles of the eyeball, except the inferior recti and levator palpebræ of one side.

There are no symptoms pointing to any further cerebral changes. The bulbar nuclei are normal as far as can be made out. There are no symptoms of tabes or any other spinal affection. Nuclear ophthalmoplegia is sometimes a part of tabes and sometimes of general paralysis, but here it appears to be the only evidence of disease in the central nervous system. It is quite possible that tabes may eventually develop, but at present there is no evidence of a morbid process other than that situated in the third, fourth and sixth nerve nuclei.

It is instructive to observe how the degeneration has involved structures which have similar functions, although separated, while more contiguous tissues of a similar nature, but different in function, have escaped. The fifth and seventh nuclei, for instance are intact, while lying nearer the third and fourth nuclei than do the sixth nuclei.

What has been the exciting cause of this progressive degeneration

in the nerve nuclei? We have a history of both syphilis and alcoholism. It is recognized that alcoholism is an exciting cause of an acute form of nuclear-ophthalmoplegia, a very rare disease, which runs a rapid and usually a lethal course, but I am not aware of any evidence to show that it gives rise to a slowly progressive form of ophthalmoplegia. The after effects of the syphilitic poison is the greatest of all factors in bringing about chronic degeneration of nerve nuclei, an eminent example being the degeneration of tabes. It is reasonable to conclude that here we have to do with post-syphilitic degeneration.

Seeing that the condition has been in existence for three years the prospects of even a stay in the progressive character of the downward tendency are not bright. It is not likely that an anti-syphilitic course will help to check the advance of the degeneration, judging from the effect of similar treatment in tabetic degeneration.

For several weeks iodide of potassium has been given and it is the intention to continue its use for some time.

CASE II.

Chronic Bulbar Paralysis.

Miss E. B., aged 44, a seamstress, has had good health, with the exception of an attack of diphtheria at 15 and of acute rheumatism at 20. The latter did not involve the heart, otherwise there is nothing to note in her past or in her family history.

She dates the onset of her present troubles to Feby. 1895, when a few minutes after exposure to a cold wind, she felt a chilly sensation at the back of the head, which was at once followed by some difficulty in speaking.

The following day, she had less trouble in articulating, but a few days after there was return of the difficulty in speech and she now noticed for the first time a difficulty in swallowing both solids and liquids. Since the onset of the above symptoms, both the patient and her friends have noticed a great variability in their intensity, at times she appeared to articulate well and have but little trouble in swallowing, but on the whole there appears to be progressive tendency, although very irregular in its progression, to a more marked disability in both speaking and in swallowing. For upwards of two years she has been annoyed with saliva drooling over the lips.

Her speech has a nasal twang. The chief difficulty appears to be with the labials.

Her tongue is atrophied, and she is unable to protrude it but very slightly beyond the lips. It is the seat of fibrillary twitchings. She has not complete control over the muscles of the lips. She is for

instance unable to press them firmly together. The palatal muscles are weak, fluids are often returned through the nose, and there is a very marked difficulty in not only swallowing liquids, but also solids.

There is a bilateral paresis of the laryngeal abductors, not sufficient, however, to give rise to stridor or other symptoms of laryngeal stenosis.

We have then in this case the following changes :

1. A marked paresis of the tongue with wasting of its muscular fibres shown by inability to protrude it, and the imperfect articulation of the lingual consonants.

2. A paresis and wasting of the orbicularis oris muscles, shown by the imperfect closure of the mouth, and the inability to correctly pronounce letters requiring the action of this muscle.

3. Paresis of the muscles of the palate resulting in regurgitation of fluids through the nose and nasal twang to speech.

4. Paresis of the muscles of the pharynx, causing a great difficulty in swallowing both liquids and solids.

5. A paresis of the abductors of the larynx, which has not as yet caused any distressing symptoms of laryngeal stenosis.

The following nerves are involved :

1. Part of the 7th.

2. The whole of the 12th.

3. Part of the 11th.

4. Parts of the 9th and the 10th.

That part of the 7th nerve which innervates the orbicularis is involved. Some observers contend that this muscle receives its supply from a nucleus immediately in the neighbourhood of the 12th nucleus, or even from the latter itself, but recent observations tend to show that the lower facial muscles receive their motor supply from the main facial nucleus, while the upper facial muscles are innervated from a nucleus situated higher up.

The laryngeal and palatal paralysis arise from an involvement of the bulbar part of the 11th nerve. While the pharyngeal difficulty is due to involvement of either the 9th or 10th, or both. It is not definitely known from which nerve the pharyngeal muscles receive their motor nerve supply.

We have to do here with a bulbar paralysis. No doubt symptoms of a more or less similar character may arise from a morbid process at the base of the brain, damaging the nerve roots as they emerge from the pons and medulla. The nerve roots of the 10th, 11th and 12th are very close together as they emerge from the brain, but a growth

in such a situation would almost certainly damage also other structures, thus giving rise to symptoms distinctive of the situation.

The accompanying diagram shows the chief nerve nuclei situated in the medulla and pons. It will be seen that there is a common nucleus for the 9th, 10th and 11th nerves, the nucleus for the latter being situated at the lowest part of this common centre. The nucleus for the 12th is close to and parallel with the 11th nucleus, while the 7th nucleus is only a little above the upper end of the 12th nucleus.

The symptoms are dependent on loss of function in parts of the 7th, 9th, 10th, 11th and in the whole of the 12th.

What has brought about this loss of function, in the bulbar nuclei ?

I. By far the most common cause of chronic bulbar paralysis is a slowly progressive degeneration of the nuclei.

This is a well recognized disease met with most frequently after the age of forty. Little is known about the causes that give rise to it. It is not infrequently a part of a more diffuse but similar morbid process in the ventral cells of the spinal cord.

II. Bulbar paralysis may arise suddenly from plugging of the vessels that supply this part of the brain with blood. In this form we, however, rarely meet with softening confined wholly to definite nuclei. Other parts are generally robbed of their blood supply, so that additional symptoms to bulbar paralysis are found to be present.

III. A rare form of bulbar paralysis from acute inflammation of the bulbar nuclei.

IV. Cases of bulbar paralysis have been described where no lesion or change of any kind has been found after death. The disease has an intermittent character and is at first chiefly characterized by a marked weakness of certain muscles after exertion, but which disappears after rest. This disease known by the name of asthenic bulbar paralysis, soon involves other nuclei than those innervated from the pons and medulla.

V. We may have a disseminated sclerosis only involving the bulbar nuclei.

VI. Finally, pseudo-bulbar paralysis from bilateral lesions of the tracts between the cortex and nuclei.

It is difficult to arrange the case before us in any one of the above classes. We have to do with a condition setting in suddenly, irregularly, but still slowly progressive and with the intensity of the symptoms varying much from day to day. Were it not for the fact that there are no symptoms other than bulbar it would conform more closely to the fifth variety (a limited disseminated sclerosis) than to any of the other forms.

We may exclude without discussion, the 2nd (hæmorrhagic, embolic or thrombotic bulbar paralysis); the 3rd (acute bulbar myelitis); the 4th (asthenic bulbar paralysis); and also the 6th (pseudo-bulbar paralysis).

The history of a sudden onset with very slow progress are against its being of the first mentioned or progressive degenerative variety. It is just possible that the patient is mistaken as to the suddenness of onset. How frequently we meet with histories of sudden onset of disease, when we know that there must have been symptoms in existence for some time! It is the effects of the *last straw* that makes the impression on the patient's mind. She may have had slight difficulty in articulation without its being noticed by either herself or friends. The fact that the trouble has been slowly progressive certainly points to a degenerative lesion, but whether this is a pure atrophy of the nuclei or a sclerotic process, limited to the nuclei or their immediate neighbourhood I don't think we have sufficient evidence to determine. The diagnosis as to the nature of the bulbar paresis rests I believe between these two varieties of lesion. The course in the future will determine the nature of the morbid process.

CASE III.

Chronic Progressive Spinal Muscular Atrophy involving parts of both the Cervical and Lumbar Cords.

The man whose case we will now consider is 36 years of age and a weaver by occupation. Six years ago his left forearm was injured in machinery, and an abscess developed on the ulnar side of the forearm, about midway between the wrist and elbow joints, which was opened. In the course of two months the wound had healed, but it was noticed that there was wasting of the muscles of the hand. The wasting steadily increased for two years, but he thinks there has been but little increase during the past four years. Five years ago he found that the muscles of the left leg¹ were weak, his toes catching any object above the usual level. A few months ago he first noticed the weakness and wasting of the small muscles of the right hand. Although there is marked wasting of the muscles of the right thigh, the patient was not aware of this until his attention was directed to it after his admission into hospital.

At 21 years of age, and again at 27 years, he had attacks of pulmonary hæmorrhage. One brother and four sisters died from consumption. There is no history of either syphilis or alcoholism. With the exception of the muscular wasting described, he does not present any evidence of disease.

Left Upper Extremity.—There is extreme wasting of the thenar and hypothenar eminences, of the interossei and lumbricales. The hand is a typical example of the "Claw Hand." The muscles on both surfaces of the forearm are much wasted as compared with those of the right forearm, the circumference of the left forearm, a few inches above the wrist, being an inch less than the corresponding part of the right forearm. There is no disturbance of any form of sensibility in the left hand and forearm. The reactions to the faradic and galvanic currents are nil in the wasted muscles. There is no wasting in the upper arm or shoulder muscles.

Right Upper Extremity.—There is wasting of the thenar eminences and of the first and second interossei. This was first noticed a few months ago. The wasting is progressive in character, but has not involved to any appreciable extent the muscles of the forearm. There is some wasting, however, in the upper arm, the difference in circumference between it and the corresponding part in the left upper arm being half an inch. The difference between the two upper arms is also distinctly to be made out on testing the power of the muscles. The faradic reaction of the muscles is lessened but very slightly. There is no disturbance of sensibility.

Left Lower Extremity.—The patient makes the complaint that when walking he is unable to lift the toes of the left foot as well as those of the right. This difficulty is very apparent when he is asked to walk across the room. There is slight wasting of the anterior group of muscles of the leg. There is no disturbance of sensibility.

Right Lower Extremity.—There is marked wasting of the muscles of the right thigh, the circumference at the middle being an inch and a quarter less than the circumference at the same part on the left side. There is a distinct diminution of both the faradic and galvanic reactions, but no objective or subjective sensory disturbance.

Reflexes.—The knee jerk cannot be brought out on the right side. It is, however, normal on the left. Ankle clonus is not noticeable in either limb, but a rectus clonus is present in the left limb. The superficial and organic reflexes are normal.

Fibrillary twitchings are to be seen in all the atrophied muscles, and also in those of the left thigh. There is no disturbance of co-ordination or special senses.

The condition present in this patient may be summarised as follows :

I. A progressive wasting of the muscles of the left hand and forearm extending over six years.

II. A slight wasting of the interossei and of the thenar and hypothenar groups of the right hand extending over a period of 6 months.

III. Wasting of the muscles of the anterior surface of the right thigh.

IV. Wasting of the muscles of the anterior surface of the left leg.

The state here differs considerably from the usual course met with in cases of progressive muscular atrophy.

1. In the prolonged course. The atrophy was marked in the left hand for some years, before there was any evidence of wasting elsewhere.

2. In the involvement of a limited but different set of muscles in each lower extremity. It is not usual for progressive muscular atrophy to involve the lumbar enlargement as is here present.

3. The different groups of muscles of the lower limbs which are the seat of the atrophy is likewise an unusual feature. The atrophy is generally symmetrical.

From the course and distribution of the atrophy and the entire absence of sensory disturbance we must conclude that the disease is spinal and not peripheral in origin. We have to do with a wasting of the anterior cornual cells in the lower cervical enlargement and at two different levels in the lumbar cord.

There is nothing that we can find in this man's past history that gives any clue as to a probable exciting cause, except the presence of an abscess in the ulnar border of the left forearm: shortly after its discharge, atrophy of the small muscles of the hand were noticed. Whether this is an accidental coincidence or not, it is impossible to say. A number of cases of spinal muscular atrophy have been reported following injury to a limb, the atrophy starting in the injured member and afterwards becoming general. It is not rare to meet with cases of other degenerative diseases of the central nervous system, where the starting point appears to have been a traumatism either general or local.

It would seem as if the nerve elements when injured suffer in their nutrition, and when once started, the degenerative process may extend far beyond the original influence exerted by the traumatism. There is no history of either alcoholism or syphilis. It is rare, I think, to meet with cases of spinal atrophy due to the syphilitic poison. Such cases do occur, but they are very rare as compared with the frequency with which the syphilitic poison attacks the sensory side (tabes) of the cord; rarer also than cases of ophthalmoplegia from syphilis.

We cannot tell why the poison of syphilis should select, as it were, more readily the nuclei of the ocular nerves, and rarely the bulbar and anterior cornual cells.

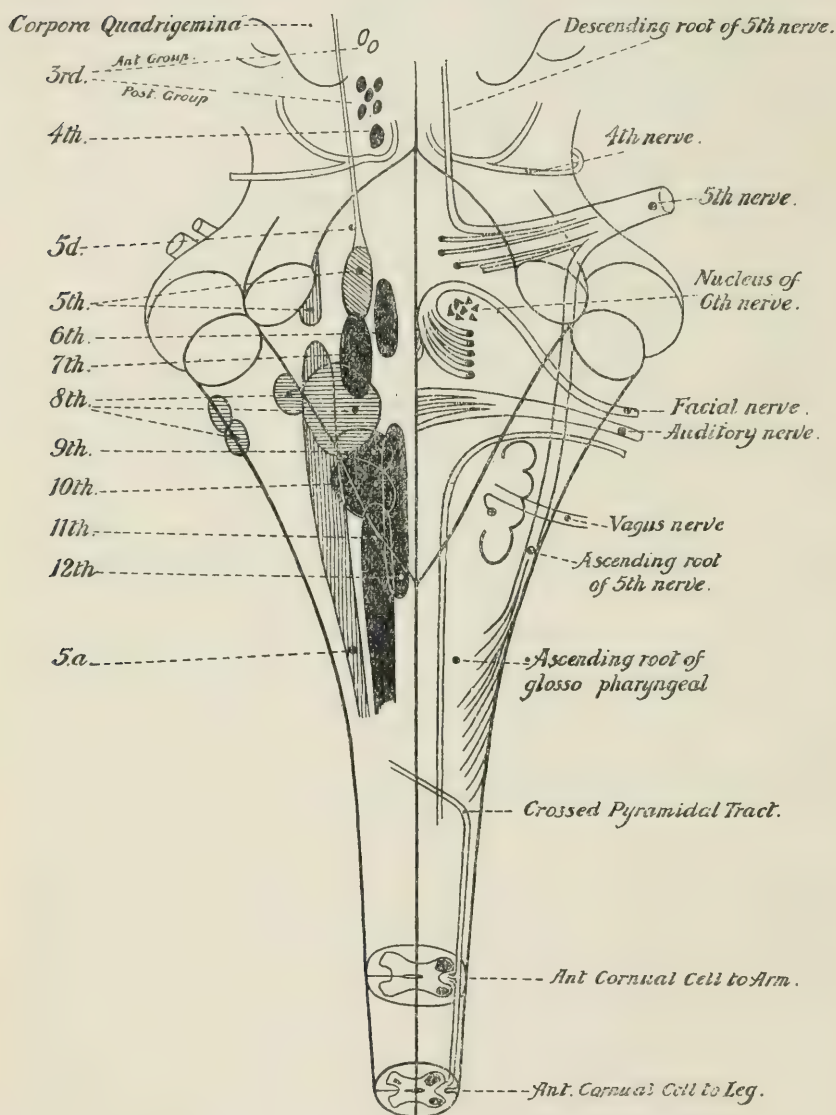


Diagram to illustrate :—

I. The relative positions of the 3rd, 4th and 6th nerve nuclei, the nuclei involved in the first case. The two groups of third nerve nuclei are shown, the posterior are deeply shaded to indicate their degeneration, while the anterior are shown in outline. The 4th and 6th nuclei are also shaded.

II. The various pontine and bulbar nuclei. The 7th, 9th, 10th, 11th and 12th are deeply shaded, to represent the supposed condition present in the second case (chronic bulbar paralysis). The whole of the main nucleus of the 7th nerve is shaded, which is not strictly correct. The same holds true with the 9th and 10th nuclei, which, like the 7th, can only be partially degenerated.

III. The course of the crossed pyramidal tract in the spinal cord and its relations to the anterior cornual cells in the cervical and lumbar enlargements. These cells are shaded to represent their degeneration, the condition of things as they are supposed to be in case No. III.

The nuclei are represented as if seen through transparent material.

Case Reports.

INTESTINAL OBSTRUCTION DUE TO BANDS, THE RESULT OF A FORMER APPENDECTOMY AND COMPLICATED BY A VOLVULUS OF THE MESENTERY.

BY

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Hospital.

Alex. M., æt. 27, was admitted into the Montreal General Hospital on May 9th, 1898, suffering from symptoms pointing to obstruction, as evidenced by vomiting, constipation, distension and tenderness of the abdomen.

Two days before he was suddenly seized with severe abdominal pain confined to a small area, two inches below the umbilicus. Soon after this he commenced vomiting and the vomiting has continued fairly constantly ever since. Purgatives of all kinds were administered, including castor oil and salts, without effect, so he was sent to the hospital. On admission he was found to have a subnormal temperature ($97\frac{1}{2}^{\circ}$), a rapid, weak pulse (140), and a very anxious expression of countenance. His tongue was dry and brown; he had contracted pupils. There was no rigidity of the abdomen, but it was somewhat distended and very tender below the umbilicus, and he complained of severe pain in this region. There had been no motion of the bowels or escape of flatus for two days. Although he was not vomiting he had a feeling of nausea. In the right iliac region was seen a scar due to an operation for appendicitis performed some three years before, in the centre of this was a small hernial protrusion. Liver and spleen dulness normal, and in the right flank a dull area was made out. Owing to this serious condition immediate operation was determined upon.

An incision, three inches long, was made in the median line below the umbilicus. On opening the peritoneum a quantity of reddish coloured serum escaped and distended dark coloured bowel presented at the opening. There were ecchymoses in spots. On introducing the fingers a band was felt in the right inguinal region near the site of the old wound, running to the mesentery and constricting the ileum. The band was divided between the ligatures; this did not relieve the distension, and on further examination a large por-

tion of small intestine was seen hanging through another loop or band, but not acutely constricted by it. This was also divided, still there was no relief, the bowel seemed to be lifeless, and no peristalsis was present, so the incision was enlarged and a further examination revealed a twist to the right of the whole mesentery. There was now nothing for it but to turn out the whole of the small intestines so as to untwist them. This was done, the intestines being covered by hot towels. They were then replaced, the wound sutured and the man returned to bed. I might mention that the wound was not completely closed, but iodoform gauze was introduced in various directions amongst the coils of intestines and a glass tube into the pelvis. The man rapidly improved and never had a bad symptom. The bowels moved next day and recovery was rapid.

In this case the volvulus was probably consequent on the constriction. These cases of intestinal obstruction are always a source of great anxiety to the surgeon and should be operated on as early as possible. The results from obstruction by bands, pressure of tumours, volvulus, &c., are not nearly as good as where the obstruction is due to some constriction within the lumen of the bowel or where resection is necessitated. Kocher has shown that any over distension of the bowel with gas or feces, produced by constriction and without any interference with the mesenteric circulation, will cause congestion of the bowel, blueness, and consequent venous stasis. Then follow ecchymoses in the mucous membrane, alteration and distension of epithelium leading to ulceration above the constriction. Now from this moment absorption of septic products commences from the fecal contents and your patient will die from general intoxication which will cause heart failure and collapse, or the bowel conditions may lead to necrosis and perforation.

Kocher advises in these cases an incision into the distended bowel and the washing out of as much as possible of its septic contents. This in a strong person will do no harm and perforations which are commencing will be detected, and if the person has a weak heart there is no better stimulant than removing the toxic products. Kocher advises emptying the bowel also in those cases where the patient's condition is such that a prolonged operation or resection would not be tolerated. In such cases washing out of the stomach should first be tried.

A CASE OF ABDOMINAL HYSTERECTOMY FOR FIBROID TUMOUR OF THE UTERUS AND DISEASE OF THE OVARIES AND TUBES—RECOVERY.¹

BY

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This is a case of fibroid uterus with double hydrosalpinx which was removed successfully from a patient with the following history :

Mrs. P., 44, was admitted to the gynæcological ward of the Western Hospital, on the 12th September, 1898. She gave the following history : Menstruation had begun at the age of 13, and was normal until her marriage at the age of 24. She had seven children and five miscarriages, the last child four years ago. She enjoyed fairly good health until two years ago, since which time her periods have become very profuse, although regular and painless. About six months ago she noticed her abdomen enlarging, and on consulting her physician, the latter diagnosed uterine fibroid and sent her to me for operation.

She presented the appearance of anæmia from hæmorrhage, but all other organs, except the uterus, were fairly healthy. The urine was acid, s. g. 1020, and free from albumen and sugar. The uterus was very hard and uniformly enlarged to the size of a large cocoanut. The tubes were enlarged and contained fluid, and the ovaries could be felt but were adherent. Operation on the 17th September, 1898. An incision, five inches long, was made in the abdominal wall, through which the uterus was dragged, after separating dense adhesions, which bound down the ovaries and tubes. It was my intention to have left in one or both ovaries so as to prevent the artificial menopause with its discomforts of hot flushes and chills, but on examination it was found impossible to do this without unduly risking the patient's life, and they were, therefore, removed. The method followed was to find and tie the two ovarian arteries individually and not *en masse*. Then the round ligaments were tied and a cut was made through the peritoneum across the front of the uterus from one round ligament to the other. The bladder was pushed away and a similar incision was made across the back of the umbilicus. It was then quite easy to

¹ Read before the Montreal Medico-Chirurgical Society, Nov. 6th, 1898.

push away the cellular tissue in the broad ligaments until the uterine artery could be felt when a ligature was placed around it, about half an inch from the uterus. As all the blood supply to the uterus was cut off, the uterus was removed at the level of the internal os without losing an ounce of blood. The cervix was left in, but the anterior and posterior layers of the cervix were brought together with catgut, and then a running catgut suture, starting from the left ovarian pedicle right across the floor of the pelvis to the right ovarian pedicle, completely closed the opening in the peritoneum and covered over the cervical stump. The incision was closed with three layers of sutures; one of catgut for the peritoneum, one of buried silk-worm gut for the fascia and muscle, and a subcutaneous silk-worm gut for the skin. This method of suturing entirely does away with the risk of hernia and also with the unsightly scar left after the interrupted suture. The time occupied was nearly an hour.

The patient had very little pain, only requiring two one-quarter grain hypodermics of morphine and her temperature never rose over one-half a degree; she was up in three weeks and went home on the twenty-eighth day.

Examination of specimen.—On cutting through the anterior uterine wall to the depth of less than one-quarter of an inch, the hard round tumour is easily shelled out from its capsule, leaving a cavity, the walls of which quickly retracted so that it was difficult to put the tumour back again. The tubes are closed at both ends so that the secretion was retained sufficiently to distend the ovaries and buried in dense adhesions. The internal cavity is enlarged to about four times its normal area, but the tumour cavity does not communicate with it. It was placed in 2 per cent. formalin, which has preserved it perfectly.

Remarks.—If this had been a young woman, anxious to bear children, it would have been possible to have removed the tumour without removing the uterus, enough of the anterior wall only being cut out to enable us to obtain pressure on the tumour cavity. The tubes could have been dissected out and removed close to the cornua and their canal dilated and the ovaries could have been cleaned free from adhesions, but there was no object in doing this conservative work in a woman of 44, especially as it would have taken much more time and increased the risk of the operation. As regards time required, however, since my visit to Europe this summer this factor will not weigh so much in the future as it has in the past, as I saw some of the most successful men there take as much as a hundred minutes for an operation like this.

NOTES OF A FATAL CASE OF ACUTE ALCOHOLIC DELIRIUM WHERE THERE WAS AN ERUPTION OF ACUTE PEMPHIGUS.

(From the Medical Clinic of the Royal Victoria Hospital.)

BY

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AND

D. MCD. ROBERTSON, M.D.

House Physician, Royal Victoria Hospital.

C. O'N., male, aged 31, was admitted to the Royal Victoria Hospital, Oct. 31st, 1898, complaining of swelling and pain in both legs, also of blisters on left forearm, right upper arm and both legs near the ankle. He gave a history of using alcohol, in moderation, till two years ago, but since then to excess. There is no previous history of delirium tremens. Had Pott's disease of the spine when a child.

Condition on entrance was that of a poorly developed and poorly nourished man, with marked right lateral scoliosis, and kyphosis, the sternum being pushed forward. He had not slept for some three days. There was a marked tremor all over the body, most marked in the hands.

Temp. 100°. Pulse 120. Resp. 24.

On both legs, about midway between ankle and knee, were excoriated areas about three inches in diameter, from which there was a slight serous exudation. These were preceded by blebs. A similar condition existed on right upper arm, and, on entrance, there was an unbroken bleb about three-fourths of an inch in diameter, full of a clear yellowish coloured fluid, on the left forearm near the wrist. The skin was warm and moist, with profuse perspiration.

Pulse was 120, fair tension, volume low. Heart dulness was not increased in size. At the apex both sounds were weak, the first being proportionately increased; at the base, sounds were normal.

Nothing abnormal was found in respiratory system, except the deformity noted above.

Tongue was coated, appetite was poor and had been so for two months. There has been no nausea or vomiting, except six months ago, when he had an attack of acute gastritis, lasting four or five days; some slight diarrhoea was present on entrance.

On admission he was quite rational, but the next day there developed a noisy, talkative delirium, with marked hallucinations, illusions and delusions. At times he had a few lucid intervals. The face became flushed, eyes bright; he could be roused from the delirium by direct questioning, but could not concentrate his thoughts for any time. All the muscles were in constant motion, tugging at the bed-clothes, trying to get out of bed, and throwing himself from side to side. The hands, tongue and lips were most markedly tremulous, while the head was retracted, the muscles of the neck being tense. The active motions were paroxysmal and accompanied by profuse perspiration.

Urine was largely passed involuntarily, and on examination was negative.

On Nov. 2nd and 3rd, the mental condition remained much the same, being somewhat more noisy. The pulse became weaker and albumen appeared in the urine. On the evening of Nov. 4th he became quieter, the pulse became rapid and weak, and there was a marked cyanosis of the extremities. About 2.15 a.m. of the 5th Nov. he began to have slight convulsions, lasting some 5 or 6 seconds, recurring every few minutes. At 2.25 a.m. he became comatose, the pulse became very weak, and he died at 2.45 a.m.

Autopsy.—Vessels of the pia all over were injected, without any evidence of meningitis. On section the brain showed acute hyperæmia.

There were old bilateral pleural adhesions, also of pleura to pericardium; partial collapse of both lobes of left lung, and acute œdema at extreme apex of right lung.

Commencing atheroma of aortic valves, and cloudy appearance of heart muscle, were noted.

Stomach was small, rugæ prominent, scattered petechiæ over mucous membrane, slight excess of mucus, but no marked gastritis. In duodenum, 1.5 cm. from pylorus, was a radiating scar of healed ulcer; duodenum was slightly congested in upper half; in jejunum some slight congestion of tips of rugæ: a more marked congestion of ileum, in some parts amounting to distinct hæmorrhagic effusion into mucous membrane.

Surface of liver was irregularly mottled with yellow; on section firm with congestion and fatty mottling.

Some old perisplenitis was present.

Left kidney was "hogbacked" with capsule slightly adherent; on section congested and firm. Right kidney on section showed uniformly dark color, the vessels of cortex and pyramids being distinctly injected as in opposite kidney.

RETROSPECT OF CURRENT LITERATURE.

Medicine.

UNDER THE CHARGE OF JAMES STEWART.

Acute Yellow Atrophy of the Liver.

DAVID ROBERTSON DOBIE. "Acute yellow atrophy of the liver."—
The Edinburgh Medical Journal, December, 1898.

In a paper read before the Medico-Chirurgical Society of Edinburgh, Dr. Dobie reports a unique case, in which a diagnosis of acute yellow atrophy of the liver was made. The recovery of the patient throws some doubt upon the correctness of the diagnosis—thus running contrariwise to the teaching on the point of prognosis in such cases, and at the same time precluding the possibility of correcting or justifying the same by the evidence obtained at the autopsy table.

The patient, a farmer, aged 50 years, fell ill in such a way as to suggest something taken having disagreed with him, as headache and vomiting and abdominal tenderness were among the early manifestations of his illness. He became febrile and jaundiced. His urine was bile-stained albuminous, with blood in clots. Hæmorrhages from the throat, mouth and nose occurred and a profuse hæmorrhagic petechial eruption was observed over the forearms, upper part of the chest and later over the whole of the body.

He made a rapid recovery for from the onset of the symptoms until he sat in his chair beside his bed with brisk appetite, regular motions and with no albuminuria, was 31 days—2nd August to 2nd September. The yellowness persisted on the 18th of August. Two days previous to this date the petechiæ increased over the thorax and abdomen. The urine is reported to have contained leucin and tyrosin—and what is yet much more rare, cholesterin crystals in the presence of bile.

It is remarkable, too, to note that the percentage of urea was fully

up to the *normal*, 3 per cent. having been observed. Such a percentage of urea is regarded as stronger evidence against the diagnosis made in this case than the finding of leucin and tyrosin is in favour of such a condition.

We are not quite able to follow Dr. Dobie in his report from time to time upon the physical examination of the liver, for in the first record of his visit he says that after a careful examination of all the organs, he could not detect any abnormal condition in heart, liver, lungs or spleen. The following day the record shows no enlargement or diminution in the size of the liver. A little further on, under "remarks," he says, "in this case we had marked increase in the volume of the liver on the day I first saw the patient, and I am sure from the history of the great discomfort and rapidity of breathing during the onset that there had been tumefaction to a great extent." . . . the liver dulness had disappeared entirely.

On subsequent examinations this organ was found to be gradually regaining size. Thus in this brief space of time, from 5th to 13th of August, enlargement, diminution beyond detection of areas and then reappearance of liver dulness are recorded. It is not easy to see how this argues acute yellow atrophy of this organ.

Dr. Dobie strives to draw several lessons from this very interesting case :

1. That the jaundice in this case is of extra hepatic origin, *i.e.*, "the symptoms were due to suppression of the secretion of the bile" which "like many other excretions in a normal state is found in the blood and eliminated at the liver, therefore accumulating within the vascular system, when its separation at the liver had been rendered impossible and therefore temporarily suspended."

2. That jaundice may be induced by a very high and long continued high atmospheric temperature.

3. That acute yellow atrophy is not a primary liver affection.

4. That it admits of cure by a very simple remedy, the oil of turpentine.

The question naturally arises in ones mind—In what state are those liver cells now ?

The case corresponds to many cases recently reported under the terms purpura or purpura hæmorrhagica, or purpura with visceral complications. So little is known of the cause of purpura and the associated organism, that this case may possibly belong to the category of obscure purpuric cases.

Mixed Infection in Tuberculosis of the Lungs.

J. A. SHABAD. "Mischinfection bei Lungentuberculose."—*Zeitschrift für Klinische Medicin*, 1897.

During the last decade the subject of mixed infection in various diseases has been attracting much attention.

A secondary infection in pulmonary tuberculosis has been regarded by many observers as accounting for the so-called septic or hectic type of temperature, so common in the final stages of the disease, and as accounting also for the rapid destruction of lung tissue observed in the more acute infections. Dr. Shabad working in Obuchow Hospital, St. Petersburg, under the direction of Professor M. A. Afanassiew, examined thirty-one cases of pulmonary tuberculosis with a view of investigating the subject of mixed infection in this disease. In his method of examination of the sputum, all possible error was excluded; in several instances the blood was examined and the body also examined after death. He divides the cases observed into two groups.

1. Those examined during life and post-mortem.
2. Those examined only during life.

Seventeen cases comprised the first group. Of these, sixteen were cases of mixed infection, while one was uncomplicated tuberculosis. There were thirteen cases of simple mixed infection, twelve of these showing the pyogenic streptococcus and one the micrococcus tetragenus. Of double mixed infection there were three cases, two with streptococcus and pneumococcus, and one with streptococcus and staphylococcus. Twenty-one deaths occurred in the thirty-one cases; seventeen bodies were examined bacteriologically.

Concerning the cause of secondary infection in tuberculosis of the lung, Dr. Shabad remarks that a lung involved in a tuberculous process affords a favourable ground for the development of streptococci and a less favourable for the development of other micro-organisms.

From an analysis of the literature and his observations upon thirty-one cases of tuberculosis Dr. Shabad deduces the following conclusions:

1. Cases of mixed infection of pulmonary tuberculosis are those in which the accompanying organism may be found either in the lung-tissue or in the blood.
2. The finding of a pathogenic micro-organism in the sputum according to the method of Kitasato is not sufficient to establish mixed infection, for experience teaches that the micro-organisms observed in this way do not all come from the lungs. To this the genuine pyogenic streptococcus forms an exception.
3. It is very important not to confound the true pyogenic strepto-

coccus with the so called streptococcus of the mucous membrane, which is morphologically similar, but is distinguished by its biological peculiarities and its lack of pathogenity. While the streptococcus of the mucous membrane plays the part of a harmless parasite, the true pyogenic streptococcus has an important prognostic significance. The streptococcus mixed infection is found in a large majority of cases (15 out of 16 fatal cases.)

4. Less frequently than the infection from streptococcus, one meets the infection of tuberculosis of the lungs with the micrococcus tetragenus and pneumococcus and the double mixed infection with streptococcus and staphylococcus or with streptococcus and pneumococcus.

5. The secondary infection complicates mostly the last stages of tuberculosis of the lungs and leads rapidly to a lethal ending. It is so frequently met that almost all cases of tuberculosis of the lungs which come up for autopsy present the manifestation of mixed infection.

6. The importance of secondary infection in pathological processes consists in the fact that together with the tubercule bacillus it takes part in the etiology of tuberculosis of the lungs, or when it has not resulted in exudation it has at least participated in influencing the general condition of the patient and the fever through the toxins produced and also in the destruction of lung tissue—the formation of cavities.

7. There are undoubtedly cases of tuberculosis of the lungs which run that course with every appearance of the hectic state, and end fatally without the participation of other micro-organisms besides the bacillus of tuberculosis.

8. For the progressive, uncomplicated pulmonary tuberculosis the reverse type of hectic fever is characteristic. In mixed infection with streptococcus, typical streptococcus temperature curve was seldom observed. In most cases the temperature was remittent or approached the constant or continued type.

9. The normal temperature characterizes the stationary uncomplicated cases. Mixed infection with normal temperature is unlikely.

Tubercular Neuritis.

ALEXANDER JAMES, M.D., F.R.C.P. "Tubercular Neuritis." *The Scottish Medical and Surgical Journal*, Dec. 1898.

In this paper, read before the Edinburgh Medico-Chirurgical Society Dr. James reviewed five cases of tuberculosis in which tubercular neuritis of one form or another was present. By tubercular neuritis, Dr. James desires to be understood—"a disturbance in the nutritive

condition, not of the peripheral nerves only, but of any part of the nervous tissue as the result of the circulation through it of a toxin developed by tubercular disease."

The first case quoted is an example of what Dr. James regards as the commonest form of neuritis in which sensory, motor, reflex and trophic disturbances existed. The tubercular process was well advanced in the lungs, the nervous phenomena were manifest in impaired sensibility of the skin over both legs and feet, impaired motor power, especially in the left side, muscular wasting in the legs, and muscular tenderness. As the case advanced foot-drop occurred, power of extension disappeared, and cramps in the muscles of the calves developed. The reflexes, plantar, achilles and patellar, disappeared. The patient died, the condition of the legs and feet remaining unchanged up to death.

The second case is quoted as illustrating: 1. That the sensory tract may be the more affected. 2. The tendency of symptoms to disappear and reappear.

The third case shows that motion was mainly affected. Loss of power was complained of in the left arm, the side upon which the pulmonary lesion was observed. The integumentary system was practically normal, the left radio-carpal joint was involved, evidently with tubercular disease. The whole arm was smaller than its fellow, and the supra- and infra-spinati and the rhomboid were considerably atrophied. Muscular tenderness existed over the forearm and slightly increased irritability to the faradic current. The power to flex and extend at the elbow joint and to raise the arm from the side was gone. After treatment with a splint considerable power was regained, and muscular tenderness disappeared.

The fourth case was that of a boy who came complaining of soreness of the left foot, and weakness of the left leg, which came on rather suddenly about five months before his admission to the infirmary. On awakening one morning, at that time, he found the foot swollen and painful to walk upon, and although the swelling went down under treatment, the foot remained extremely tender. On admission there was found slight thickening over the inner side of the left tarsus. The pulse and temperature were normal, no signs of pulmonary disease. The left thigh and leg were considerably smaller than the right. After treatment in bed for some time slight, if indeed any, improvement was observed and amputation was performed with the result that the reflex irritability of the legs became less and less marked. "Six months after the amputation," Dr. James remarks, "the knee and ankle clonus could no longer be elicited on the right limb, although

the knee and ankle jerks were still increased. One year afterwards all that remained was a slightly increased knee-jerk in the left limb."

The disturbed condition of the lumbar cord in Dr. James' opinion was due to a combination of the toxin with peripheral irritation, while the extremely irritable condition of both lower limbs, and the wasting of the muscles of the left lower limb show that there is little doubt that the condition of the cord itself must have been a morbid one.

"Causeless hemiplegia" is grouped under the head of tubercular neuritis. Often post-mortem examination on hemiplegic cases reveals no cause for the paralysis and the supposition of the presence of œdema or some vaso-motor change explains the occurrence. Dr. James prefers to regard such cases as the result of the action of a tubercular toxin, manifesting itself in connection with a certain tract of the cerebro-spinal axis. Convulsive attacks and temporary paralysis in tubercular meningitis are probably largely due to the toxin.

The fifth case illustrates that class of cases in which tubercle is present in the lungs. It terminated suddenly with severe brain symptoms, convulsions and coma. Post-mortem examination of the brain revealed nothing beyond congestion, œdema and slight subarachnoid hæmorrhages on vertex of the left side. Dr. James thinks we are entitled to look upon this case as very probably an example of general nerve tissue-poisoning by the tubercle toxin. He remarks, further, that in tubercular disease we are very likely to have toxic effects from other toxins than the tubercle.

Relapse in Scarlatina.

RICHARD H. KENNAN, M.D. "Note on relapse in scarlatina."—*The Dublin Journal of Medical Science*, December, 1898.

This note containing evidence upon the rare occurrence of relapse in scarlatina has its foundation in observations made by Drs. Caiger and Kennan.

Dr. Caiger after eliminating such cases where any doubt surrounded the diagnosis of the first attack, as well as those of abortive second attacks occurring late in the period of convalescence, found in a large statistical account a true relapse or early second attack in .5 per cent. of all cases admitted to hospital. He further stated that the severity of the second attack was inversely proportioned to that of the first.

Dr. Kennan saw three undoubted cases showing relapse, while Dr. MacDowell Cosgrave is quoted as having reported upon two such cases.

W. F. Hamilton.

Hemiplegia following Diphtheria.

SLAWYK. "Zur Caseristik der halbseitigen Lähmungen nach Diphtherie," Von Dr. Slawyk (Asst. in Prof. Heubner's Klinik, University of Berlin).—*Charité Annalen*, 23.

In the above article, Dr. Slawyk gives an interesting account of three cases of hemiplegia following diphtheria which occurred in Prof. Heubner's Klinik. Although peripheral palsies are common after diphtheria, hemiplegia from cerebral changes is one of the rarest of events in the diphtheria of childhood.

Henoch, in the latest edition of his work on the diseases of children, says that he has only seen four cases of hemiplegia following diphtheria, and Baginski only saw three in 3,000 cases. Bokai, in a very extensive field in the children's hospital in Budapest, saw only five cases during nineteen years.

The three cases observed by Slawyk occurred in children during convalescence from severe attacks of diphtheria. In every case there were marked signs of cardiac weakness, and also of nephritis. In two cases there was paralysis of the palate. The hemiplegia set in on the 22nd, 19th and 18th days respectively, after the beginning of the diphtheria. Restlessness, headache and elevation of temperature accompanied the onset of the paralysis. Delirium, loss of consciousness or convulsions was not present in any of the cases.

The cause of the hemiplegia, which was left-sided in all three, was found to be embolism of the arteriæ fossæ sylvii in two cases, and a large thrombus in the right internal carotid where it gives off the sylvian artery in the third case.

In all three cases, the hemiplegia was complete, involving the face as well as the extremities. In the treatment antitoxin serum was employed on the 5th, 7th and 8th days respectively, but it apparently had no influence in preventing the severe affection of both heart and kidneys which was present.

Slawyk has been able to find an account of 50 cases of hemiplegia following diphtheria in medical literature. In every instance where reference is made to it in the reports which he consulted, the paralysis set in during convalescence. Of the 50 cases, 32 recovered, 14 died, and in 4 no statement is made as to the final issue of the disease.

Complete recovery was not the rule, contractures, hemichorea, athetosis and idiocy being met with in the majority of the 32 who escaped with their lives.

Post-mortems were performed in 13 of the 14 fatal cases, when it was found that the cause of death was : Hæmorrhage (Mendel's case),

1 ; thrombosis, 1 ; embolism, 9 ; embolism and thrombosis, 1 ; sclerotic atrophy of a hemisphere (Baginski), 1.

The arteriæ fossæ sylvii was the seat of the cause 11 times, and the internal carotid, where it gives off the sylvian artery, once. In one case, in addition to the hemiplegia there was embolism of the central artery of the retina. The great cause of the embolism is the heart weakness, and it seems that in the majority of cases, no endocardial changes are met with, but often myocardial which may be either interstitial or parenchymatous.

J. Stewart.

Surgery.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

Complete Gastrectomy.

SCHLATTER. "Complete gastrectomy."—*New York Medical Record*, December 25th, 1897.

RICHARDSON. "Complete gastrectomy."—*Boston Medical and Surgical Journal*, October 20th, 1898.

Although cases of so-called total extirpation of the stomach have been reported from time to time, since Langenbuch reported his two cases in 1894, yet a critical examination of the reports of these cases renders it probable that in all of them a small portion was left behind. Schlatter claims that his case, operated upon on September 6th, 1897, is really the first instance of the stomach being completely removed in the human being. His claim to have done a total extirpation is confirmed by the pathological report of Professor Ribbert, of the University of Zurich. Ribbert, who examined the stomach after its removal says that one end is unmistakably œsophageal in histological structure, and that the other end is unmistakably duodenal. It has been known for some time that dogs are able to survive the artificial obliteration of the stomach and the loss of its functions. The so-called "Czerny dog" survived the operation of gastric excision for five years and was then killed for purposes of anatomical study.

Schlatter's patient was a woman, fifty-six years of age, a silk weaver, who claimed that in her family cancer was hereditary.

Richardson's patient was also a woman, fifty-three years of age. The operation was performed on May 31st, 1898.

MacDonald and Brigham, of San Francisco have each performed total extirpation of the stomach.

Schlatter after removing the stomach was unable to approximate the duodenum to the œsophagus without undue tension and therefore closed the duodenal end and united with the œsophagus a loop of small intestine fifteen inches from the duodenal-jejunal fold which he brought up over the transverse colon. Richardson, however, by tying and cutting the restraining attachments, succeeded in approximating the cut end of the duodenum to the end of the œsophagus without dangerous tension. The abdomen was closed without drainage. This

woman three months after operation was going about the ward, in good health. She had a clean tongue, absence of all *faecal ex ore*, a natural stool once in twenty-four hours, no pain, and had gained 2000 grams in weight. Richardson's patient had some trouble with sutures. After the wound had closed it reopened and several sutures came away with some pus, but on October 16th, 1898, three and one-half months after operation she was well and had gained a great deal in strength, but not in weight.

An important anatomical fact determined by these operations and confirmed by the examination of the cadaver is that the oesophagus may be drawn down considerably below the diaphragm, thus permitting the division being made quite beyond the limits of the stomach.

These cases raise a number of interesting questions concerning the obliteration of all gastric functions. It was found necessary to administer food in minute quantities. A quantity approaching ten ounces seemed to excite vomiting some weeks after operation. At regular intervals of two to three hours, in Schlatter's case, milk, eggs, thin gruel or pap, tea, meat, rolls, butter and Malaga wine were given. The daily quantity amounted to one quart of milk, two eggs, two or three ounces of pap or gruel, seven ounces of meat, seven ounces of oatmeal or barley water, one cup of tea, two rolls and half an ounce of butter. As was expected, for theoretical reasons, the addition of hydrochloric acid and pepsin was found valueless. The alkaline fluid of the intestine at once neutralized the acid and rendered the pepsin inert. Nevertheless proteids were readily assimilated in the intestinal tract.

The urine remained normal except in the diminished quantity of chloride of sodium. But this woman, asked to have her food prepared with less salt than that of the other ward patients.

The faeces were well formed, of normal consistency, and light yellow in colour. The microscope showed large numbers of fat globules and fatty crystals, some undigested vegetable fibres, but no undigested animal fibres or connective tissue. Large quantities of triple phosphates were observed. The number of micro-organisms was normal.

How can a person vomit without a stomach? This woman, under observation had repeated attacks of ordinary nausea, retching and vomiting, ejecting as much as thirty ounces at one time. It may be that the duodenum became distended into a sort of compensatory receptacle for food.

Dr. Wendt thinks the following conclusions are justifiable :

1. The human stomach is not a vital organ.

2. The digestive capacity of the human stomach has been considerably overrated.

3. The fluids and solids constituting an ordinary mixed diet are capable of complete digestion and assimilation without the aid of the human stomach.

4. A gain in the weight of the body may take place in spite of the total absence of gastric activity.

5. Typical vomiting may occur without a stomach.

6. The general health of a patient need not immediately deteriorate on account of the removal of the stomach.

7. The most important office of the human stomach is to act as a reservoir for the reception, preliminary preparation and propulsion of food and fluids. It also fulfils a useful purpose in regulating the temperature of swallowed solids and liquids.

8. The chemical functions of the human stomach may be completely and satisfactorily performed by other divisions of the alimentary canal.

9. Gastric juice is hostile to the development of many micro-organisms.

10. The free acid of normal gastric secretions has no power to arrest putrefactive changes in the intestinal tract. Its antiseptic and bactericidal potency has been overestimated.

Thyroidectomy.

KOCHER. "Thyroidectomy."—*Correspondenz-Blatt für Schweizer Aeoet*, Sept. 15th.

Prof. Kocher reports an additional 600 cases of thyroidectomy, bringing his total up to 1,600. All these cases with the exception of 150 of the last 600 were operated upon by Prof. Kocher himself. When it is known that only about 10 per cent. of the cases of enlarged thyroid treated at the Berne Clinic are operated upon, some idea is obtained of the enormous field for observation of this condition. The remainder, 90 per cent. of the cases are treated medically. The medical treatment consists in the administration of thyroid extract and preparations of iodine. The latter acts as efficiently as the former. Cases of solid tumour that do not improve under medical treatment, cases of cyst formations, cases in which there is embarrassment of respiration, and all cases in which there is a suspicion of malignancy are submitted to operation.

A curved incision with the convexity downward is preferred as leaving a less conspicuous scar. The muscles are separated and not

divided. Prof. Kocher now operates chiefly with local anæsthesia using a 1 per cent. solution of cocaine.

G. E. Armstrong.

Operative Wounds of the Thoracic Duct.

CUSHING, H. W. "Operative wounds of the thoracic duct."—*Annals of Surgery*, June, 1898.

Wounds of the thoracic duct are usually considered to be invariably fatal. Dr. Cushing reports two cases which have been successfully dealt with in the Johns Hopkins Hospital. The first case (Professor Halsted's) was one in which an extensive dissection of the glands of the axilla and supra-clavicular triangle was carried out during the removal of a scirrhus of the breast. The wound of the duct was not recognised at the time of operation, nor was any evidence of the injury observed for ten days, when, upon the wound being dressed for the second time, a slight fulness was noted in the supra-clavicular region. The cicatrix was opened allowing the escape of four or five ounces of milky fluid. The wound was packed with gauze, and after discharging profusely for eight days the flow ceased and the patient made a good recovery. The second case (Dr. Cushing's) also occurred during the removal of cancerous glands in the neck. The dissection had been carried back to the brachial plexus, when a small, thin walled vessel, the size of a straw, was seen upon the tissues being relaxed. A clear, serous fluid welled from a small wound in it about one centimetre above the subclavian vein. A fine black silk suture was passed which inverted the edges of the wound and controlled the flow. The patient made an uninterrupted recovery.

Seven other authentic cases of operative wound of the duct are recorded. In one of these, death occurred from shock within a few hours of operation. In the remaining six cases, recovery ensued: in two of these the wound was packed with gauze: in one, a small vessel was found and clamped; in one, the point of evacuation of the fluid was clamped for three days; and in the remaining two, the vessel was sutured. The condition was recognized in all these cases by the discharge of a more or less milky fluid. In one case the amount lost was estimated at three pints per diem.

E. J. Semple.

Obstetrics and Diseases of Infants.

Macerated Fœtus in Latter Half of Pregnancy.

NAU. "Macerated Fœtus in Latter Half of Pregnancy."—*Centralb. f. Gynak*, No. 25, 1898. (*B. M. Jour. Epitome*, Nov. 19, 1898.)

Nau collected 61 cases from one hospital in Marburg. In 28 per cent. there was absence of all symptoms raising suspicion of foetal death on the part of the mother herself. In about 50 per cent. nothing more was noted than distinct cessation of foetal movements; in 19.67 per cent. other symptoms were said to be present; but Nau urges the possibility that they were often suggested by leading questions. In the most nearly verified cases Klein and Baumeister were of the opinion that the constitutional disturbance was due to absorption of toxins due to maceration of the fœtus without the action of bacteria.

The dead fœtus was usually expelled in the eighth month. The average term of retention of the fœtus in the uterus after its death was fourteen days.

The labor was of average duration, but in 47.37 per cent. of the cases premature rupture of the membranes occurred.

In six cases only was any obstetrical operation required.

The placenta separated normally in all cases.

Forty-two out of the 61 mothers had no fever in child-bed, and in only three of the 19 temperature cases was the fever evidently due to the passage of a dead fœtus out of the genital canal.

Treatment of Abortion by Abdomino-Vaginal Expression of the Uterus.

BUDIN, P. "Treatment of Abortion by Abdomino-Vaginal Expression of the Uterus." *Progrès Méd.*, Sept. 17th, 1898. (*B. M. J. Epitome*, p. 346, 1898.)

P. Budin records three cases of abortion treated by digital curettage and abdomino-vaginal expression of the uterus.

He considers that the curette and all forms of abortion forceps are dangerous.

The following procedure is then recommended: After chloroform

has been administered and the vagina and external genitals rendered aseptic, the cervix is manually dilated. Occasionally it may be necessary to use Hagar's dilatars.

The uterus is then fixed with one hand acting through the abdominal wall, and one or two fingers, according to the age of the pregnancy, inserted and the whole interior of the organ scraped out, care being taken to loosen all parts of the ovum. If traction then fails to remove the fragments, uterine expression may be resorted to, as follows: Two fingers are placed in the posterior vaginal fornix and pressed forwards, while the external hand makes firm pressure on the fundus and anterior wall of the uterus.

In this way the organ is compressed between the two hands and the contents are forced into the vagina.

The cavity of the uterus is then washed out with some antiseptic solution at a temperature of 110-120° F. If the organ fails to retract and hæmorrhage occurs, the cavity may be plugged with iodoform gauze, a small quantity of the same material being placed in the vagina.

A Speedy Method of Dilating a Rigid Os in Parturition.

FARRAR, J., M.D. "A Speedy Method of Dilating a Rigid Os in Parturition." *Brit. Med. Jour.*, Sept. 17th, 1898.

The author of this paper, read at the Edinburgh meeting, reports five cases in which he made use of the local application of a ten per cent. solution of cocaine to overcome rigidity of the os in labour.

All the cases reported were primipara, and all had been in hard labour for many hours. In all the condition disappeared within five minutes of the application, leaving the os widely dilated.

He recommended that in these cases a sterile 10 per cent. solution of cocaine be swabbed over the cervix by means of a piece of absorbent cotton, held in a pair of forceps. The solution must be held in contact for a moment or two to secure the best results.

In no case was any deleterious effect of the cocaine noted.

In the discussion which followed the reading of the paper Dr. R. Jardine, of Glasgow, stated that he had employed cocaine pessaries without result.

Several physicians have, since the publication of the paper, reported cases in the *B. M. J.*, where this drug, applied as Dr. Farrar suggested, has proved very effectual.

Forty Cases of Fever in the Puerperium.

WILLIAMS, WHITRIDGE J. "Forty cases of fever in the puerperium, with bacteriological examination of the uterine contents."—*Am. Jour. of Obstet.*, Sept. 1898.

Dr. Williams has adopted the rule of making a bacteriological examination of the uterine contents in every case where the temperature reaches 101° F., in hospital cases, and 102° F., in out-patient practice. After thoroughly cleansing the external genitals with soap and water, and a 1-1000 bichloride solution, the patient is placed in the Sims' position, and a Sims speculum inserted, the anterior lip of the cervix is seized with a bullet forceps, drawn down as far as possible and then the exterior of the cervix is wiped off with sterile cotton. A sterile glass tube 25 c.m. long and $\frac{3}{4}$ millimeters in diameter with one end curved like a uterine sound, is then inserted and passed up to the fundus. A large syringe is attached to the free end of the tube and by suction a quantity of the lochia thus drawn up with it. Both ends of the tube are sealed after its withdrawal. Both cover glass and cultures are then made from the contents of the tube.

The cases reported were from the following sources: 22 from the obstetrical wards of the Johns Hopkins Hospital, eight from the out-patient department of the same hospital and 10 cases from consultation practice.

Streptococci were found in eight cases; staphylococci in three cases; colon bacilli in six cases; gonococci in two cases; anaërobic bacteria in four cases; unidentified aërobic bacteria in three cases; bacteria in cover glass, but cultures sterile in four cases; diphtheria bacilli in one case; typhoid bacilli in one case; gas bacilli (*bacillus aërogenes capsulatus*) in one case; cover glass cultures, but blood sterile in 11 cases; cover glass and cultures sterile, but with malarial plasmodia in blood, in one case. Total of 44 cases.

The apparent discrepancy is due to mixed infection in several of the cases.

In the eight cases where streptococci were found, they were demonstrated in pure culture in six, while in two there was a mixed infection. None of these cases terminated fatally. Staphylococci were found, once alone and twice associated with other organisms.

Colon bacillus present in six cases, were found in pure culture in four and mixed in two. Two of these cases were subjects of eclampsia, in which the bowels were acted upon by croton oil so the source of infection was not far to seek.

The practical value of bacteriological examination was specially

demonstrated in the fact that in eleven of the cases with marked rise of temperature, the examination showed the absence of infective bacteria in the lochia. Further observation of the above group of cases showed that in many instances the temperature was probably due to an auto-intoxication from the intestines as was indicated by the rapid fall of temperature after brisk purgation.

The Practical Significance of Bacteria Found in the Vagina.

WILLIAMS, WHITRIDGE J. "The practical significance of bacteria found in the vagina."—*Am. Jour. Obstet.*, Oct. 1898.

From the bacteriological examination of the vaginal secretion in ninety-two pregnant women, Dr. Williams comes to the following conclusions: That auto-infection is impossible, as he found in but two of the cases the staphylococcus epidermidis albus, and in none of them any of the usual pyogenic cocci. That the gonococcus is occasionally found in the vaginal secretion, and may extend into the uterus and tubes during the puerperal state. That it is possible, but not yet demonstrated, that in rare instances the vagina may contain bacteria, which may give rise to sapræmia and putrefactive endometritis by auto-infection. That death from puerperal infection is always due to infection from without, and usually follows the neglect of aseptic precautions by doctor or nurse.

He advises that vaginal examinations be made as infrequently as possible, and that before such, the external genitals should be cleansed and disinfected carefully, the examining hand being rendered as aseptic as for a laparotomy. He considers that vaginal douches are not necessary and are probably harmful.

D. J. Evans.

Reviews and Notices of Books.

A Text-Book of Obstetrics. By BARTON COOKE HIRST, M.D., Professor of Obstetrics in the University of Pennsylvania. With 653 illustrations. Pp. 820. Philadelphia: W. B. Saunders, 1898. Price in cloth, \$5.00. Sheep or half morocco, \$6.00

Prof. Hirst, as he states in his preface, has devoted himself exclusively for the past twelve years to the practice and teaching of obstetrics. His position as an author and teacher warrant the expectation of a work of special merit.

In this book, Prof. Hirst has given the profession a thoroughly excellent *précis* of the subject of obstetrics.

He has considered the subject under the following main headings: I. Pregnancy; II. The Physiology and Management of Labor and the Puerperium; III. The Mechanism of Labor; IV. The Pathology of Labor; V. The Pathology of the Puerperium; VI. Obstetrical Operations; VII. The New-Born Infant.

It is questionable whether it would not have been better to consider the subject of Mechanism, before taking up that of the Management of Labor and the Puerperium.

From the point of view of the student, scarcely sufficient attention has been paid to the explanation of the mechanism of labor.

In the treatment of eclampsia, the author condemns strongly the employment of pilocarpin. He recommends highly the use of veratrum viride, and the hypodermic injection of large quantities of normal saline solution. In plethoric cases he considers bleeding gives very good results. He condemns the *accouchement forcé*, claiming that "the necessary operation for the delivery of the woman distracts one's attention from the treatment of the convulsions, and adds for the time being, a violent source of irritation to the already highly wrought nervous system."

The chapter on Puerperal Sepsis is most masterly, it is probably the best presentation of this subject, take it all round, in English to-day. He condemns the use of the vaginal douche before labor, as it cannot be depended upon. In those cases where it is necessary, the vagina must be scrubbed out as well as douched, as for a surgical operation. He recommends the routine examination of the vaginal discharge before labor.

The author's observations on the employment of antistreptococci serum are worthy of the gravest consideration.

Prof. Hirst has had an unusual experience in the performance of

Cæsarian section, and declares his preference for the Porro to the Säger operation.

The section devoted to the consideration of the new-born infant is particularly good. The author considers Schultze's method, together with mouth to mouth insufflation, the best treatment in asphyxia neonatorum. He condemns the method of Sylvester, because the pectoral muscles are too weak to draw up the thorax.

The whole presentation of the subject is most practical, and the author's style clear and concise.

We highly commend the book to the senior student, and the physician, as being one of the very best text-books on obstetrics.

The publisher's work leaves but little to be desired. The illustrations, many of them original, are if anything too numerous, while the colored plates had much better have been omitted.

The index is very full and has evidently been very carefully prepared.

D. J. E.

Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Stated Meeting, November 21st, 1898.

J. G. ADAMI, M.D., PRESIDENT, IN THE CHAIR,

Drs. A. D. Stewart, D. A. Shirres and I. C. Sharp, of Montreal, were elected ordinary members. Drs. Schwartz, Peters, Smith, Brown, Patterson, Harvey, Lynch and Thomas, of Montreal General Hospital, were elected temporary members.

A Case for Diagnosis.

Dr. J. A. SPRINGLE exhibited a child with multiple firm tumours of the hand. In the absence of a histological examination he had been unable to make a diagnosis, but having received permission to remove one of the growths, would report the result at the next meeting. A full report of this case will appear later.

Dr. F. J. SHEPHERD had carefully examined the case and could come to no definite conclusion regarding its nature. From its course he thought that it must be infective, and the diagnosis lay between a fibrous, a tuberculous, or a sarcomatous condition. He did not think it was syphilitic. The question would have to be decided by a histological examination.

Tuberculosis of the Fallopian Tubes.

Dr. F. A. LOCKHART reported this case and showed the specimen. The report will appear next month.

Dr. LAPTHORN SMITH thought this was likely a case of pus-tubes in which the pus had become inspissated. The first constriction had been probably the one at the uterine end, and this had cut off the cavity of the tube from the uterus and later the second constriction had developed, giving rise to the separate tumours. He considered that the operator had done well to leave the ovaries, it showed well-timed conservatism, and even if pregnancy did not occur, the patient was freed from the nerve storms and other discomforts of a premature menopause.

Dr. LOCKHART, in reply, said that the tube was lying quite free in the pelvis, and there was no sign that adhesions had ever taken place, so that there was no possibility of Dr. Smith's ingenious explanation being the correct one.

Carcinoma of the Ovary.

Dr. F. A. L. LOCKHART read the report of the case and Dr. D. P. ANDERSON demonstrated the pathological specimens from it. It will be published later.

Dr. LAPHORN SMITH referred to a similar case of his own in which operation had meant three months more of life to the patient and a comparatively easy death. He thought that operation was justified in these cases even from that consideration alone. He asked if there had been any fluid found free in the peritoneum, as in nearly every case in which he had found fluid free with tumour, that tumour had proved to be malignant.

Dr. LOCKHART said that there was no fluid in the abdomen.

Intestinal Obstruction.

Dr. F. J. SHEPHERD reported this case. (See page 46.)

Dr. JAMES BELL said that the question of intestinal obstruction following abdominal operations was becoming an important one, owing to the frequency with which the abdomen is opened nowadays. He referred to a case recently under his care: A woman, aged 32, who had had a double ovariectomy performed on August 26th and had made a good recovery and kept quite well (with the exception of intestinal symptoms) until October 13th. At 2 a.m. of that day, symptoms of obstruction set in and persisted until the operation 83 hours later. On opening the abdomen he had found a foot and a half of the small intestine, at about one foot above the ileo-caecal valve, coiled up and adherent. The intestine above was distended to the size of a coat-sleeve and quite black, while the adherent portion was not larger than the little finger. He had separated the constricted part and disentangled it, but, on returning the distended portion of intestine, his finger had perforated it, and a gush of fluid faeces took place. After washing up, the rent in the intestine was repaired and recovery took place without a bad symptom. The speaker thought the fact that these cases get permanently well was most extraordinary, on account of the damage done to a considerable portion of intestine. This made the third case that he had operated on under similar circumstances with recovery.

Dr. Bell furthermore advocated evacuation of the bowel in these cases. The portion above the obstruction was always found full of liquid faeces and kept up the distension, and drainage and irrigation were an important part of the operation. One often hesitated about opening the intestine on account of the impending gangrene, which made one dread being unable to suture it satisfactorily.

Dr. A. LAPHORN SMITH had opened the abdomen five times for

obstruction. One of these was for a knuckle of small intestine caught by adhesions to a raw place left by detaching omentum, and on freeing these the vermicular movements had at once carried off the contents. The intestine was enormously distended above this point, but collapsed below it. In another case, on opening the abdomen, he had found the bowel attached to the stump of an ovary, and separating the adhesions was all that was necessary.

He suggested to Dr. Shepherd that some of the dangers of an operation of this kind could be reduced by having made, the same size as the operating table, a pan of hot water to be kept at a temperature of 110° F. There would then be less difficulty in keeping the intestines properly warmed while outside the abdominal cavity, and the patient would leave the table warm, instead of with a temperature lowered to 96° as was often the case.

DR. WESLEY MILLS suggested that when hyperæmia in the region concerned in this case was not to be explained on obvious mechanical principles, the nervous system was to be interrogated. The splanchnic region was that so much used by nature to regulate the blood pressure and relieve the heart; it alone, as physiology had demonstrated, could contain all the blood of the body, and its importance in the vital economy,—even in the maintenance of life itself,—recent experiments had rendered clearer than ever. Considering the rapidity of the changes after the unfortunate conditions had been altered, it seemed highly probable that the restoration of a normal circulation in the intestine was to be explained through the action of the vasomotor centre by means of the splanchnic and other nerves of the sympathetic system. The abnormal condition of the circulation as well as the restoration to the normal, was probably brought about reflexly, though the direct action of toxins, etc., on the nervous centres as a cause of the hyperæmia, was also to be considered.

Dr. SHEPHERD, in reply, said that Kocher looked upon the congestion as due to hyperdistension of the intestine, and claimed that he could produce the same condition in animals by distending the intestine with gas. With regard to the volvulus, he had never seen or read of a similar case, but had not looked the matter up.

Functional Heart Murmurs.

Dr. James Stewart read a paper on this subject by Dr. MAUDE ABBOTT. (See page 1.)

Dr. W. F. HAMILTON expressed his admiration for the character of the work displayed in the paper. So full of important details is it that in order to derive the full benefit therefrom one must peruse it thoughtfully and meditatively. To all interested in the study of cardiac cases such observations are especially helpful.

He regretted, however, that more attention had not been paid to the character of the cardiac sounds, for much aid in diagnosis may be thus obtained. The division of cases into anæmic and non-anæmic class was of doubtful utility since the division was not made in many instances by the hæmoglobinometer, but by the general appearance of the patient.

Again, no reference was made to the posturing of patients as a means of diagnosis between functional and organic murmurs.

These remarks were not meant to detract in any wise from the value of the paper. Such features as these could only be secured by a careful supervision of all cases presenting cardiac murmurs with the end in view, viz., that of distinguishing the functional from the organic murmurs.

Dr. J. B. McCONNELL had listened with both pleasure and pride to the excellent paper from his former student, Dr. Abbott. The paper pointed to the great importance of having careful detailed reports of all cases in our hospitals. He was a little surprised that no reference occurred in it to cardio-pulmonary murmurs. Potain claimed that most of the functional murmurs were of this class and a large proportion of those hitherto regarded as cardio-hæmic and cardio-vascular. They are heard chiefly in the pulmonary area and over the conus arteriosis, as antero-posterior excursion during the cardiac systole is greatest here. The murmur is caused by compression of the lung against the chest-wall during the heart's systole or during the diastolic phase by aspiration of a portion of the lung lying in contact with the heart. The murmur may be heard at all periods of the cardiac cycle, presystolic, systolic, telesystolic, diastolic and tele-diastolic. They can as a rule only be diagnosed by exclusion, and they usually disappear on forced inspiration or expiration and sometimes in the horizontal position. That hæmic murmurs existed and depended on a changed relation between the vessel and its contents would seem improbable from the fact that such changes would be expected to show themselves by a murmur in the aorta where the pressure is very much greater than in the pulmonary artery. The absence of hypertrophy was a point in diagnosing a cardio-pulmonary murmur, but this, he thought, could only apply to the systolic variety which is usually explained by supposing a relative mitral insufficiency to have occurred, and they would occur the more readily if the heart was enlarged because the heart would more likely impinge upon lung then. In a case he had examined about a week previous, where from excessive bicycling there was hypertrophy but no valvular lesion, he was able to make out cardio-pulmonary murmurs. Their innocence

in many cases made it important to diagnose them from a life insurance point of view.

The PRESIDENT held it a matter over which the Society might well congratulate itself that the first communication addressed to it by a medical woman was of such high scientific value. Although Miss Abbott very modestly depreciated the value of the results obtained by her, undoubtedly those results must receive wide attention and be the basis of yet other researches in other hospital records and other hospital wards. It is painful to think how much material of the utmost value is stored away in our hospital reports—material which only needs to be carefully collected in order to yield results which must establish the name and reputation of whoever will give the necessary time. For of all methods establishing facts and theories in medicine, the statistical stands preëminent. Granted only that observations have been honestly recorded in the clinical notes, an observation, of relatively small value in itself as establishing any point, becomes most important when treated as a member of a group. For himself he became impatient with the blind folly of too many of the younger members of the profession in our larger hospital towns in thinking that they will more likely ensure a competence and a name by sitting still in their office waiting for practice to come to them instead of going forth to do some piece of work in the wards or registraries of the hospitals, work which conscientiously performed not only strengthens the individual and renders him a more capable member of the profession, but also must bring him into favourable notice and help him onwards. For the beginner in medical research nothing is simpler, few things more valuable, than to work through hospital records in order to establish or refute one single point. It was only necessary to read that most popular and valuable of all modern works upon medicine, of which, and of the author of which, Montrealers are so proud, to see how its value depends upon the constant adherence to the statistical method. He could assure the younger members of the Society that they would find every opportunity given to them at both of the larger English hospitals to carry on such work.

Coming to Dr. Abbott's own work, in his opinion the most important results achieved was the light thrown upon the causation of functional murmurs by the study of cases, such as those of pernicious anæmia, in which we know that the heart muscle itself is affected, as compared with others in which no such affection is reasonably to be anticipated. This alone, in a subject so obscure, is an advance of high value.

Iniiencephalic Monstrosity.

Drs. H. S. SHAW and D. J. EVANS then exhibited the body of an apparently full time female infant which was an almost perfect specimen of *Iniiencephalus*.

The whole aspect of the specimen was that of a "Brownie."

The head was well-formed but owing to lack of development of the neural canal throughout nearly its whole length, the occipital and sacral regions were in direct continuity. Just at their junction below the hair of the scalp was a small meningocele. The face was well formed and directed upwards. Anteriorly the chin seemed to extend to the sternum there being no neck. The chest and abdomen were well-formed. The extremities seemed to be unusually long and were free from deformity.

Photographs had been taken of the specimen. Frozen sections of the monster would be made and studied and a later report made to the society.

T H E

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No. 1.

PRIVATE WARDS IN PUBLIC HOSPITALS A CAUSE OF HOSPITAL ABUSE.

Private wards in public hospitals are occupied by the more wealthy patients. The wealthy patients set the fashion. It is no longer difficult to induce poor patients to go to the hospital. The changed attitude of the poor toward the hospital is in part due to the improved character of the public wards, the good nursing and medical care, and also to the fact that the leaders in society and the wealthy so commonly go to the hospital in case of sickness and for surgical operation.

A lady or a gentleman who has been in a hospital as a patient and has learned to appreciate the advantages of hospital facilities for treatment, advises a poorer neighbour to go also. The poorer neighbour replies, "Oh, yes, I know; but the expense is greater than I can afford." The natural rejoinder is, "Well, then, go into the public ward. I saw the public wards, they are clean and bright, and you get there the same nursing and the same physician or surgeon as you would in a private ward, and no expense at all, or a matter of fifty cents a day."

Let any one go down to the court house and it will be obvious that the legal profession, as a class, make their living out of the very class of people that the medical profession treat gratis. But if lawyers had two adjoining offices, and in one gave advice for nothing and in the other charged fees, how many would try to get into the free office? The lawyers adopt a much wiser plan. Before a man can take out a suit in "Forma Pauperis," he must go before a judge and, under oath, state that he has not the means to pay.

Of course the circumstances of the two classes, the patients on the one hand and the clients on the other, are very different, and the

comparison cannot be carried too far. Yet, nevertheless, it is unquestionably true that the members of the medical profession are often imposed upon, and the imposition is assuming alarming proportions in the large cities of Canada and the United States, as well as in England and on the Continent. Something must be done and done wisely, to lessen this growing evil without letting the deserving suffer, and one way is to remove private wards altogether from public hospitals, and leave to private enterprise the care of those who can afford to pay for and should pay for private wards. When it becomes known that only the poor go to the public hospital, then pride alone will largely diminish the numbers applying for free treatment in public hospitals.

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Manual of Bacteriology, by Robert Muir, M.A., M.D., and James Ritchie, M.A. M.D., 1897.

The library of the late Allen Ruttan, Esq., M.D., has been presented to the Medical Faculty.

GESTA MEDICORUM.

“QUICQUID AGUNT MEDICI NOSTRI FARRAGO LIBELLI.”

Dr. F. Gilday has decided to commence practice in Montreal.

Dr. R. H. Craig has been appointed Laryngologist to the Montreal Dispensary.

There is a proposal on foot to establish an ‘Academy of Medicine’ in Toronto.

Sir William Jenner, the distinguished pathologist and physician in ordinary to the Queen and the Prince of Wales, died Dec. 12th.

Koch, at Nürnberg, has recently shown a case in which there was abdominal actinomycosis starting from the vermiform appendix.

Dr. David Patrick has been appointed Clinical Assistant in Children's Diseases and the Dermatological Clinic at the Montreal General Hospital.

It has been decided to establish a fund for the benefit of St. Luke's Hospital, Ottawa, in memory of the late Dr. H. P. Wright, to be called the “Dr. H. P. Wright Memorial Fund.” The idea seems to be meeting with favour as \$3000 were subscribed in one day.

Dr. T. G. Roddick, M.P., Professor of Surgery in McGill University was elected an Associate Fellow of the College of Physicians of Philadelphia, at the last meeting. This body was founded in 1781, and is one of the largest and most important of the American Medical Associations.

The proprietors of the “Canadian Practitioner” and the “Medical Review” have agreed to amalgamate in 1899, the name of the new journal to be “The Canadian Practitioner and Medical Review.” The

editors hope that by combining forces they will be able to publish a better journal than either has been in the past.

We learn that it has been decided to postpone the meeting of the third Pan-American Medical Congress which was to have met in Caracas, Venezuela, in 1899. This has been advisable owing to the late revolution in that country and to the fact that there has been a grave epidemic of small-pox. The Congress will therefore meet in 1900.

Rummo, of Palermo, at the Academy, reported a particular form of "dystrophic skin disease," under the name of *geroderma genitodystrophicum*.

In this disease there is early senility, and a condition which has some relation to myxœdema, akromegaly and gigantism.

The skin of the face is waxy-yellow, the forehead low and furrowed, the nasolabial folds very deep, the ears thick, the feet and hands enlarged, the abdomen and breast relaxed, the hair bristling, and the voice nasal. He had been able to collect 15 cases of this disease in Sicily.

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Original Communications.

DISCUSSION ON TYPHOID FEVER.

THE MEDICAL TREATMENT OF TYPHOID FEVER.*

BY

JAMES STEWART, M.D., Professor of Medicine and Clinical Medicine, McGill University ; Physician to the Royal Victoria Hospital.

As yet we are not able to speak of a specific treatment of typhoid. We are unable to destroy or counteract the typhoid bacilli, or prevent or even limit the effect of their toxins in the human subject. The results obtained by immunizing and curative inoculations in hydrophobia, tetanus, and diphtheria, have naturally led to a search for similar antitoxic principles in typhoid. Hammerschlag and v. Jaksch have reported a number of cases treated by serum taken from convalescent typhoid patients. Beumer, Peiper, Klemperer, and Levy have obtained a serum by treating dogs with gradually increasing doses of bouillon cultures of typhoid bacilli, which was found sufficient to immunize susceptible animals, such as mice and guinea-pigs. With these measures they were also able to effect a cure some time after infection had been induced. They tried the serum in a few cases of typhoid in the human subject, but with no definite result, except perhaps, to show that it could be used without inducing any unpleasant or dangerous symptoms. Other interesting work of this character has been carried out with the serum of convalescents and immunized animals, but the result, although apparently effective in the disease as it is met with in susceptible animals, still has been disappointing when applied to counteract the disease in the human subject.

In this connection I will refer to a form of treatment which is very old, but has lately been revived by a few physicians in the United States

* Read before the Montreal Medico-Chirurgical Society, January 23, 1899.

and in Canada. I refer to the use of purgatives and intestinal antiseptics. W. B. Thistle, of Toronto, who read a paper on this subject at the meeting of the Canadian Medical Association in this city two years ago, is a strong advocate of this method of dealing with typhoid fever. He highly recommends calomel and salines. He appears to believe that the intestines are, by these measures, swept clear of bacilli, and the further production of toxins prevented. It is claimed for this method that the disease is aborted. Another so-called abortive method of treating typhoid is known as the Woodbridge method. It appears to be a favorite way of dealing with typhoid fever in the Southern and Western States, especially in the country districts. It consists in the administration of podophyllum, calomel, guaiacol, eucalyptol, and menthol, according to some definite formulæ. Many physicians have written claiming abortive power over the disease by this method, but all the reports that I have examined bear the evident stamp of inaccuracy in observation, and are, in consequence, of little or no value. To claim for any drug, either antiseptic or cathartic, that it is capable of destroying or removing all noxious micro-organisms from the gastro-intestinal tract, is simply absurd. As the typhoid bacilli are not present in the intestinal tract prior to the breaking down of the lymph tissues, it is impossible for antiseptics to reach them, except through the blood, and it is, of course, vain to expect that any medicinal agent that we know of can exert a germicidal action on the organism collected in the lymph tissues. Dr. Woodbridge proves too much. He claims, for instance, that in upwards of 8,000 cases of typhoid treated after his method, the average duration of the disease was only twelve and a-half days. Now, as the infiltrated tissue does not commonly break down before the end of the second week, it follows that his remedies have no exposed surface to work their antiseptic action on, hence the action must be through the tissues, a claim which is utterly unworthy of anyone possessing even an elementary knowledge of pathology.

The number of different antiseptics that have been used in typhoid is numerous. The old iodine and carbolic acid combination was for a long time a favorite; at present it is rarely heard of. Calomel, naphthalin, naphthol, iodoform, salol, salicylate of bismuth, boracic acid, chlorine, turpentine, have all been used at one time or another with the idea of producing a specific effect, but there is no evidence to show that any of them, or any combination of them, has any effect in lessening the duration, or to any appreciable degree modifying the severity of the disease.

Of all these agents, calomel is the one that has been the longest and probably the most favourably known. Many physicians believe that

the early employment of a few small doses of calomel have a favorable influence over the course of typhoid. It is not unlikely that after the breaking-down of the lymph structures, its action may help in preventing the development of a secondary infection, but more than this, I think few would claim for it.

THE ANTIPYRETIC TREATMENT.

One of the most noticeable changes in the method of treating typhoid during the past few years is the constantly lessening use made of antipyretic drugs. Ten or fifteen years ago it was the rule, even in hospitals, to use these drugs very freely. Many here may remember the time when it was a common practice to give quinine in very large doses—20 to 40 grains. Following this we have the slavish employment of the synthetic alkaloids, from antipyrine down to the most recent new antipyretic advertised by the manufacturing chemist. Antipyrine, phenacetine and lactophenine are the drugs of this class that are the most frequently employed at present, but they are rarely resorted to in the very full doses that was formerly the practice. To give large doses of any of these to reduce the fever of typhoid is a practice which is fraught with danger, without any compensating advantage whatever. Guaiacol applied externally quickly reduces temperature, but it is open to the same objection as the synthetic alkaloids, inducing, when effective as an antipyretic, marked nervous disturbance, and so, consequently, lessening the resisting powers of the patient.

I will now refer to the treatment of typhoid by systematic cold bathing according to the method of Brand. This method has now been extensively employed for many years in Germany, France, Australia, and on this continent, and with such universally favorable results that it is generally allowed, even by those who do not carry it out in practice, to be the most effective method at present known.

The great superiority of the Brand over other methods of treating typhoid has been so conclusively proven that it seems almost unnecessary to add anything further to the long list of series of cases that have been treated in this way. What is particularly conclusive about the evidence of the value of this treatment is the uniformly favorable results obtained in different parts of the world. "The mortality at the Red Cross Hospital at Lyons amounted to 7.3 per cent., that of Dr. Hare, in the Brisbane Hospital, in Queensland, 7.84 per cent.; that of Osler, in the Johns Hopkins Hospital, to 7.8 per cent.; that at the German Hospital in Philadelphia, under Wilson and his colleagues, to 7.8 per cent. These results are most impressive; they show that in the method of Brand, systematically carried out and applied to successive cases, as they present themselves, we have the means of saving, out of every hundred cases of

the great endemic disease of the present epoch of our civilization, at least seven more lives than by any other plan." (J. C. Wilson, American Text-Book of Applied Therapeutics.) Since the opening of the Royal Victoria Hospital on the 2nd of January, 1894, this method has been the routine treatment of typhoid fever. In the following table the number of cases admitted each year, with the number of deaths and the percentage mortality are recorded.

TABLE I.
CASES OF TYPHOID FEVER ADMITTED INTO THE ROYAL VICTORIA
HOSPITAL DURING THE FIVE YEARS ENDING DEC. 31ST, 1898.

Year.	Number of cases.	Number of deaths.	Percentage Mortality.
1894.. .. .	84	3	3.5
1895.... ..	84	4	4.7
1896.... ..	72	0	0.0
1897..... ..	75	7	9.3
1898.... ..	93	4	4.3
Totals.... ..	408	18	4.4

The bath treatment was carried out in every case where the temperature rose above 102.2° F., except where there was some especial complication, as haemorrhage, or symptoms pointing to perforation.

The following table shows the cause of death in the eighteen fatal cases, with the percentage mortality from each cause:—

TABLE II.
CAUSES OF DEATH IN EIGHTEEN CASES.

	1894.	1895.	1896.	1897.	1898.	Percentage Mortality.
Perforation... ..	..	3	..	2	1	1.47
Intoxication.....	1	..	..	2	2	1.22
Haemorrhage.....	1	..	..	1	1	.73
Septico-Pyæmia.. ..	..	1	..	..	..	.24
Suppurative Cholecystitis....	..	..	..	1	..	.24
Broncho-Pneumonia... ..	1	..	..	..	..	.24
Abdominal Distension.. ..	..	..	..	1	..	.24

In our 408 cases we have nine deaths from perforation and haemorrhage, being exactly one-half.

If a large series of cases of typhoid fever treated by measures other than by bath treatment are taken, it is found that perforation and haemorrhage taken together cause only about one-fourth of the total deaths, while under the bath treatment the mortality from these two causes amounts to one-half of the total mortality.

The following table, prepared by Dr. F. E. Hare, late resident Medical Officer of the Brisbane Hospital, shows the modification which has been

imprinted upon the constitution of the typhoid mortality list by the introduction of the bath treatment :—

Causes of death in typhoid.	According to Murchison.	Brisbane	
		Hospital before bath treatment.	Hospital after introduction of bath treatment.
Perforation....	3.0	3.0	2.9
Haemorrhage ..	1.4	1.88	1.2
Other causes..	12.8	9.73	3.4
Total mortality, per cent.		17.2	7.5

There is no doubt great difficulty to be encountered in the endeavor to carry out the bath treatment in private practice, but that it is possible to do so, even in remote country districts, the letter of Dr. Gordon, of Alywin, in the November number of the Montreal Medical Journal, will, I think, prove convincingly. A good deal has been written about the harshness of the treatment, and, no doubt, many patients complain of it at first, but as a rule, they soon find out that they are much more comfortable after it, and are usually glad to bear with patience the immediate disagreeable effects. It is, of course, impossible to carry out this treatment in private without the assistance of one or two skilled nurses. Portable baths can now be obtained, and, provided the practitioner can obtain the assistance of one skilled nurse, there is no valid excuse for its non-employment.

It is said by some observers that relapses are more frequent after the bath, than after other methods of treating the disease. There is however, no proof of this. It is strange what confusion exists as to the real meaning of relapse in typhoid ; and this is the reason for the great discrepancy of opinion as to their frequency, ranging between two and four per cent.

Many include all after-febrile attacks, no matter what their duration may be, under the head of relapses, while others call relapses those exacerbations of pyrexia which occur during the course of the disease. Taking a large series of cases, relapses may, in a rough way, be set down as occurring in from about 3 to 12 per cent. of all. In 325 of the 408 Royal Victoria Hospital cases, where particular pains were taken to closely investigate this point, it was found that relapses occurred in about eight per cent. of the cases. This proportion is exactly the same as in Osler's and Liebermeister's series, and is not any larger than that given by observers in different countries where other plans of treating the disease have been followed.

The reduction of temperature affected by the cold bath although an important factor, is not the chief one in its beneficial effects. The most obvious effects are seen in the nervous, respiratory, and vascular systems.

The marked stimulating effect of the cold on the peripheral nervous system, and reflexly on the nerve centres, is undoubtedly a powerful means in preventing the supervention of a low typhoidal state, which is so common a feature of severe cases treated on the expectant plan. Robin has shown that the processes of oxidation are decidedly reduced during the course of this disease. He has further pointed out that the cold bath increases oxidation, there being a distinct increase in the exchange of gases and in the whole process. He considers that the beneficial effects of cold bathing are due to this increase of oxidation, whereby the toxic products of the tissue destruction are reduced to less harmless excretory bodies. Whether the leucocytosis observed after bathing has any influence, has not yet been determined.

THE TREATMENT OF INTESTINAL HAEMORRHAGE.

Intestinal haemorrhage is, next to perforation, the most common alarming symptom in typhoid fever. In our eighteen fatal cases it was the cause of death in three instances (1.6 per cent.) We had in all 13 cases of haemorrhage in the 408 cases (3.18 per cent.) It is not infrequent to meet with concealed haemorrhage. This occurred in a good many cases. A sudden fall in temperature should always be looked upon as suspicious of the occurrence of a haemorrhage, even if no blood appears externally, if there is no other likely cause for the sudden lowering of the temperature, the condition should be treated as one of haemorrhage. Haemorrhage in typhoid fever is frequent enough to constitute it a symptom, rather than a complication. No doubt one frequently sees cases where a slight haemorrhage appears to be beneficial, convalescence setting in apparently soon after its appearance, still it is always wise to take a serious view of even a trifling haemorrhage and to place the patient at once under such measures as are suitable.

In a few cases, haemorrhage from the bowels appears to be a simple oozing from the blood vessels. In cases of profound toxic poisoning, the blood breaks down and finds its way out of the vessels without any special lesion of continuity of the vessel walls. Even severe losses of blood may not be attended by fall of temperature, as much as 80 ounces in three days having been lost without affecting the temperature. In dealing with haemorrhage it is important to lessen the amount of nourishment given by the stomach, or wholly stop feeding except by the rectum. The foot of the bed should be elevated and a Leiter's metallic coil applied to the abdomen. There is no remedy to be compared with opium. It should be given in doses sufficient to cause either slight drowsiness or contraction of the pupils. It is often a difficult point to decide how far it is advisable to push opium in these cases.

The reaction following the effect of large doses, given for some days,

may be very considerable. In one case it looked as if such a deleterious after effect of opium were manifest. A man, aged 31, was admitted in October, 1897, on the ninth day of the disease, in a very apathetic state. Between the 27th and 28th of October, he had repeated hæmorrhages, the loss it was computed, being upwards of 83 ounces, but after the 28th there was no further bleeding. On the 28th the abdomen was distended, and the distension continued to slowly but gradually increase, day by day, up to November 4th, when he succumbed, death apparently being due to the very great distension. After death, numerous ulcers were discovered in the lower ileum, caecum, and ascending colon, but in no instance had perforation occurred. The source of the previous bleeding could not be traced.

The practice of giving astringent drugs, like iron, tannic acid, turpentine, etc., is, fortunately for the patient, becoming less and less frequent. Whether ergotine, hypodermically, has any influence in checking intestinal bleeding, I am unable to say.

THE TREATMENT OF PERFORATION.

When perforation occurs, the sooner the case is transferred to the surgeon the better. It is no doubt possible for spontaneous recovery to take place, but it is too rare an event as compared with the result following early operation, to be for a moment considered. The result of operation, considering the gravity of the condition for which it is performed, must be looked upon as most gratifying. Keen has collected 83 cases with 18 recoveries, a result which justifies interference in every case where the condition is recognized. Here, however, we meet with great practical difficulties. The so-called typical symptoms of perforation, were, in most of our cases, conspicuous by their absence. Perforation may occur in persons extremely ill, without any pain, tenderness, distension, rigidity, or vomiting, and it may be found at the post mortem without having been suspected during life. Again, the symptoms may be developed very slowly, where a patient is stuporose from the intoxication of the disease, deep-seated tenderness and a gradually increasing abdominal distension may be the only signs. In several cases I have noticed symptoms of the same character without any perforation, recovery having taken place afterwards.

Peritonitis may be set up in typhoid from other causes than from perforation, and I believe this to be a more common event than is generally believed. I believe I have met with several instances of a more or less generalized peritonitis where recovery took place.

THE DIET.

There is an almost universal agreement as to the best way of feeding typhoid patients, but now and then one reads in medical journals about

pleas for a more liberal feeding than is usually the custom, some going so far as to advocate the administration of solid food, not alone in early convalescence, but even during the active course of the disease. Barr, of Liverpool, and Fred Shattuck, of Boston, have recently urged very cogently for a more liberal feeding of typhoid patients. Dr. Shattuck, for upwards of five years, has been allowing his typhoid patients a more liberal diet, and with, as he says, satisfactory results. The tendency to relapses, to perforation, and to haemorrhage, he finds not increased. He does not advocate an indiscriminate diet, but feeds his patient with reference to his digestive power, rather than solely or mainly with reference to his fever. In addition to the ordinary diet he often allows either soft-boiled or raw eggs, finely minced or lean meat, scraped beef, the soft part of raw oysters, soft crackers with milk or broth, soft puddings without raisins, soft toast without crust, wine jelly, apple sauce, etc. Cases are not infrequent where fever persists for some days after convalescence has been established, the temperature keeping up from weakness and impoverished blood, rather than from the persistence of local lesions. In such cases, appropriately called "starvation fever," a more liberal diet is soon followed by the establishment of health.

DISCUSSION ON TYPHOID FEVER.
THE SURGICAL TREATMENT OF TYPHOID FEVER.*

BY

G. E. ARMSTRONG, M.D.

Associate Professor of Clinical Surgery, McGill University ; Surgeon to the
Montreal General Hospital, and Attending Surgeon to the Western
Hospital ; Consulting Surgeon to the Protestant Hospital
for the Insane, Verdun.

I think that the committee that arranged this discussion would have done wisely to have indicated certain features of typhoid for consideration, rather than the whole subject. To do justice at all to the surgical complications and sequelae of typhoid alone would require many meetings, and in the time allotted I can only most briefly refer to some of the most important ones. What I say can only be suggestive, to deal at all fully with any one, this evening, is hopeless.

The bacilli of typhoid can live in the living human body for such a long period of time, and are so widely distributed through the different tissues of the body that evidence of their work is widespread and in many tissues long delayed. Professor Keen has lately published a most valuable work on the surgical complications and sequels of typhoid fever, and from it much that I have to say is taken.

Gangrene.—Under this head I do not include bed-sores, although these sometimes are very much of the nature of gangrene. Typhoid gangrene is rare. Neither Murchison nor Flint met with a case in their large hospital experience. It may occur in mild forms of the fever, and generally late in the course of the disease, or early in the stage of convalescence. It may be due to an embolus from the heart, but more frequently to an autochthonous thrombus. In these cases a pure culture of the typhoid bacillus has been found in the walls of the artery and vein, and in the thrombus. The distribution in the cases collected by Keen is as follows : Ears, 6 cases ; nose, 10 cases ; face, neck and trunk, 47 cases ; anus, 5 cases ; genitals, 20 cases ; legs, 126 cases.

The veins are affected by thrombosis more frequently than the arteries, but the results are, as might be expected, less disastrous.

The preventive treatment consists in the attainment of good hygienic surroundings, the sustaining of the heart by cardiac tonics and stimulants, and the careful avoidance of injuries or any undue pressure upon any part. When gangrene has already occurred it is considered wise

(*Read before the Montreal Medico-Chirurgical Society. Jan. 23rd, 1899.)

to wait for a line of demarkation, and then to amputate. One case of amputation of the legs is reported followed by recovery.

Affections of the Joints.—During the course of typhoid there may occur a rheumatic, septic, or pure typhoid, arthritis. As a rule more than one joint is affected, but in the monarticular variety, the hip is most frequently and seriously involved. While the rheumatic and septic forms of arthritis not infrequently terminate fatally, the pure typhoid joints practically always recover, and ankylosis is very rare.

The distension and destruction of the joint may end in dislocation. I have recently had under my care in the Montreal General Hospital, a young girl, brought in from the country, in whom this serious complication had occurred. The physician who brought her, a most able and careful man, told me that she had lived in a poor, damp house, many miles from his residence, and that he had not been able to secure any nursing other than that supplied by kindly-disposed neighbours. On admission to the hospital she was thoroughly crippled, both hips and both knees had been involved, and the right hip was dislocated on to the dorsum ilii. Most extensive bed-sores, laying bare each hip, and nearly the whole of the sacrum, were almost healed over. The right knee lay fixed across the lower end of the left thigh, and the two legs were flexed upon the thighs. By means of apparatus of one kind or another, the legs were straightened, and when she left the hospital she could stand and walk a little. She was advised to spend some months in the country to recuperate, and then to return to the hospital. I have not seen her since. In this case it seems reasonable to suppose the arthritis to have been partly septic, although perhaps purely typhoid at the onset. The contraction deformities are probably reflex. A knowledge of the occasional occurrence of arthritis in typhoid, should lead the physician to examine from time to time the joints of the body, and particularly the hip joint, to take heed to complaints of pain in the neighborhood of joints, and to carefully relieve painful joints by position, the use of sandbags, and where indicated, to apply moderate extension. If effusion threatens to produce dislocation, the joint should be aspirated under the strictest antiseptic precautions, and if pus is found, which is seldom the case, the joint should be opened and treated according to the indications.

Affections of the Bones.—Keen has collected 205 cases of typhoid bone disease. Bone disease is a late sequel of typhoid, often appearing weeks or even months after the patient has left the hospital. The pain is not generally acute and patients frequently return to the hospital with a discharging bone sinus. These sinuses may have been discharging for months with every opportunity and probability of ordinary pyogenic infection, and yet the pus yields a pure culture of the typhoid bacillus.

It would appear that, while no bone is exempt, yet some are more frequently involved than others. For instance, the ribs were affected in 40 cases; the humerus, in 11 cases; the ulna in 15 cases; the pelvis in 8 cases; the femur, in 22 cases; the tibia in 91 cases; the fibula in 3 cases; and the foot in 8 cases. The extraordinary frequency of bone disease in the lower extremities is noticeable. This may be due to the frequency of injuries, or, as Keen thinks, to their being more distant from the centre of the circulation and where nutrition is more sluggish and its activities most easily disturbed and impaired. The date of onset has been ascertained in 186 cases, and is as follows:—

In the first two weeks, 16.

From the third to the sixth week, 66.

From months to years after the fever, 104.

So that bone disease is more frequently a sequel than a complication of typhoid.

Usually the first symptoms are local pain, tenderness, and swelling. Frequently there is a slow subsidence of the symptoms. Recovery may follow, or the parts may become red and soon after may fluctuate. In other cases, after a slow subsidence, the pain and swelling may reappear. Osler and Parsons refer to excellent examples of such oscillating cases.

The surgical treatment of typhoid bone lesions although often tedious, operative measures being repeated in some cases more than once, is in the end almost always satisfactory. The surgical treatment is generally called for when the patients are fully recovered and their reparative power fairly good. When fluctuation can be perceived, unquestionably immediate operation should be done, and it is still better to operate before fluctuation appears, unless resolution is fairly certain to follow. I have had, in the Montreal General Hospital, some cases of very extensive necrosis of the long bones, which early operation would probably have limited.

In operating upon typhoid abscesses and bone lesions great thoroughness is requisite. The bacilli are found more in the abscess walls than in the pus. If the periosteum is involved, it must be removed and the bone beneath chiselled away. If indications are present that the medulla is involved, the trephine must be used and all the infected area gouged out. Repeated operations are sometimes needed because of the lack of thoroughness in the first instance. Chantemesse relates a case in which, for osteomyelitis, the tibia was trephined three times. No pus was found, but the disease persisted, and the patient was only cured a year later by opening the tibia by an extensive operation, forming a long gutter in the bone. In my own cases I have found at times a mixed infection, and in other cases a pure culture of the bacillus of Eberth. Recently I had to deal with an extensive abscess over the left

parietal, the pus from which gave a pure culture of the bacillus of typhoid. Recovery followed after a free incision with thorough scraping of the soft tissues and a superficial chiselling of the exposed bone.

Passing over, for want of time, typhoid abscesses, typhoid haematoma, the cerebral complications of typhoid, otitis media, and the typhoid affections of the larynx, pleurae, lungs and heart, the stomach and oesophagus, I will speak of intestinal perforation in typhoid.

Perforation of the Intestines.—In 4,680 cases tabulated by Fitz, the mortality from perforation was 6.58 per cent., which may be accepted, therefore, as fairly representing its frequency. It is certainly much more frequent in men than in women, for what reason we do not know. In children it is very rare. Fortunately for the surgeon and the patient, there is generally only one perforation, although two have been reported in 21 cases, and in 2 cases there were 25 to 30. In 81 per cent., the perforation was in the ileum, in 12 per cent., in the large intestine, and in a few instances in the vermiform appendix, Meckel's diverticulum, and jejunum. The greatest number of perforations have occurred during the second, third, or fourth weeks of the fever. The mortality has, up to the present, been very high. It is a debatable point whether perforation of the intestine in typhoid fever ever recovers without operation. Murchison placed the mortality at 90 per cent., and the mortality after general peritonitis had occurred at 95 per cent. With our present knowledge of the results of infection of the peritoneum by intestinal contents, and the experience gained by operators in the uncertainty of the diagnosis of perforation by the most careful and experienced clinicians, one may reasonably doubt the existence of perforation in any case when recovery follows.

There are 89 well-authenticated cases of operation for typhoid perforation recorded, with 17 recoveries, a mortality of 81 per cent., which when compared with Murchison's unchallenged figures of 90 or 95 per cent., may well give us hope for still better results in the future. Keen's analysis of Westcott's table of 83 cases shows some surprising results. Under fifteen years of age there were five cases and two recoveries, or 40 per cent. of recoveries. From fifteen to twenty-five years of age there were 23 cases and three recoveries, or 13 per cent. of recoveries. From twenty-six to thirty-five years of age there were 24 cases and 5 recoveries, or 20.8 per cent. of recoveries. Over thirty-five years of age there were 11 cases, with 5 recoveries, or 45.5 per cent. of recoveries.

These figures show that operation for typhoid perforation of the intestines are more fatal between sixteen and thirty-five than under sixteen and over thirty-five.

A critical enquiry into the cause of this tremendous mortality, which

is far and away beyond that attending perforation of the alimentary canal from other causes, as, for example, perforative appendicitis, perforating gastric ulcer, gunshot and other wounds of the intestine, leads one, in the first place, to consider and try to improve upon our present methods of diagnosing typhoid perforation.

The first and great step in advance is to be made just here. Operations undertaken after a general septic peritonitis has developed, will not be more successful in the presence of the other unfavorable conditions always present in the third and fourth week of typhoid, than elsewhere. To obtain better results in the future than have been attained in the past, operations must be performed earlier, they must be done as soon as perforation occurs, and before the infection has spread.

The signs of perforation are sudden onset of abdominal pain, accompanied by localized abdominal tenderness, and in some cases nausea and vomiting. The pulse may become altered in rate and quality, but not always at first, to a marked degree, and the temperature may suddenly lower. Each of these symptoms must be separately and carefully estimated and collectively considered. They may be masked by typhoid toxæmia and the most careful clinician may occasionally err.

I have operated ten times for typhoid perforation, and in none of my cases was the occurrence of perforation marked by those well-marked, striking symptoms so generally mentioned in text-books. The symptoms often simulate very closely those of perforative appendicitis, even in the right-sided tenderness.

It would seem that the presence of leucocytosis may in the future prove to be a valuable sign of intestinal perforation in typhoid when considered together with the presence and absence of other symptoms. According to Thayer there is no increase in the proportion of white blood-corpuscles during the fever, but rather a slight diminution in their number which gradually diminishes until convalescence. During the fever the number may fall even below 2,000, and sometimes below 1,000 per cubic centimeter. The lowest count seems to be about the end of the third week. Sometimes the white blood-cells increase markedly in number with the fever, even without any complication. Four cases were observed by Cabot in which the count was over 11,000, and ran as high as 17,000, without any other than the typical typhoid lesion. But the effect of complications is very marked and undoubted. Cabot mentions one case of perforation in which five days before perforation the number of white cells was 8,300, and at the time of perforation, 24,000. In another case at the time of perforation the number of white blood-cells was 18,500. The increase of white blood-cells may be almost, if not quite, as great upon the occurrence of phlebitis or otitis media, or the development of a typhoid abscess. General bronchitis and cystitis

have usually no such effects. It seems clear then that it is correct to make an occasional count of the white blood-cells, as a routine practice in typhoid fever, and, if with the development of symptoms that lead to the suspicion of the occurrence of a perforation, the count should be repeated, and if leucocytosis is found present, and other typhoid complications can be excluded, this symptom would justify the assumption that a perforation has occurred. In some cases of profound typhoid toxæmia leucocytosis may not occur.

It would be well in suspected perforation to have a surgeon see the case with the attending physician, and it would be a good hospital practice to adopt Osler's suggestion that the house-surgeon should visit these cases in the wards with the house-physician.

The dangers of surgical interference are unquestionably very great. The following words of Wilson, written twelve years ago, state the question very clearly: "Granted that the chances of a successful issue are heavily against you, that the patient is in the midst or at the end of a long sickness, that his tissues are in the worst state to stand the injuries from the knife, that the lesions of the gut may be very extensive, that the vital forces are at the lowest ebb; no one has yet hesitated to perform a tracheotomy in the laryngeal complications of typhoid fever which requires it to save life, for these reasons. The operative treatment of purulent peritonitis has been performed many times successfully by the gynaecologist in conditions less promising. In point of fact, the objections that may be urged against laparotomy in intestinal perforation in enteric fever are no more forcible than those which would have been made use of at first against the same operation in gunshot wounds of the abdomen. The courage to perform it will come from the knowledge that the only alternative is the patient's death."

I am sorry that I can only count one recovery among my ten cases, and that one was not an ordinary perforation. I will allude to it again. Another of my cases lived over six weeks and ultimately died, subsequent to the occurrence of the third perforation. This young man did well for four weeks after I closed his first perforation. I regarded him as saved, when the second perforation occurred. The incision had not fully closed and the second perforation occurred *in situ*, and the contents of the intestines all escaped externally, and I think that had not a third perforation occurred within the abdomen on the forty-second day after operation, that he would have survived the first two. In one case I opened the abdomen and failed to find any evidence of perforation, only about two feet of completely collapsed bowel, from some cause undiscovered. This has occurred to other surgeons, and only recently a similar case occurred in the Johns Hopkins Hospital. My patient, as well as the one in Baltimore, recovered, the operation apparently having

had no retarding influence on the convalescence. Three points have been conspicuous in my cases:—

1. That in all of them the operation had been too long delayed. In all of them, on opening the abdomen, gas and faecal matter escaped and it was quite evident that a very considerable portion of the peritoneal cavity was already infected.

2. That notwithstanding the poor reparative power of the patient the closure of the perforation in the intestine healed readily, and shortly. At the autopsies performed on these patients, the portion of intestine involved was distended with water and air, and in every instance proved tight, and no leakage was possible.

3. The great lack of reparative power was manifest in the failure of union in the abdominal incision. In the man who lived forty-five days no union occurred, and when the stitches were removed the edges of the incision fell apart. About the twenty-first day after operation, the edges were scraped and brought together by sutures, but again union failed to occur. In the case of the man in whom no perforation was found, the union of the edges of the incision was very imperfect, although not a drop of pus formed. The man left the hospital with a ventral hernia and was directed to return in six months and have the edges again united.

The result of perforation is sometimes a localized abscess, similar to the localized abscess which sometimes follows a perforative appendicitis. My last case was of that character. The man was admitted to the Montreal General Hospital under the care of Dr. Finley. He had been treated in the country for typhoid, and during the course of the fever developed pain, tenderness, and, later, a tumour mass of very indistinct outline in the umbilical region. His condition was a very puzzling one, and it was thought at one time that it might possibly be tuberculous. About a week after his admission to the hospital he developed symptoms of intestinal obstruction, distress, pain and faecal vomiting. I opened the abdomen in the median line below the umbilicus, to relieve the obstruction. Upon opening the abdomen a large quantity of pus escaped, twenty ounces or more. It seemed to lie in a walled-off space in front of the intestines, which were pushed backward and upward. The space was irrigated and drainage provided. During his convalescence he passed some faeces and gas through the drainage tube, at different times. His blood gave the typical typhoid reaction. He has quite recovered and has gone home. He told us that his wife and daughter had enteric fever at the time that he was taken ill. I think there can be little doubt that this was a case of typhoid perforation, followed by localized abscess.

Liver and Gall-Bladder.—Typhoid affections of the liver and gall-bladder are extremely interesting and far-reaching, but the time limit set by the committee prevent me entering upon their discussion.

DR. F. G. FINLEY—I think the chief interest that typhoid fever has at present is as to its treatment, and the use of the cold water bath. The advocates of this method claim that it diminishes or alleviates certain nervous symptoms. This testimony is so universal, and everyone that carries it out must have observed it for himself, that it must be accepted. The second point is that it diminishes mortality. Different writers give different numbers, from 4 per cent. to 7 per cent. With a view to see what the results have been in the General Hospital here, I have looked over the reports for a number of years past, and compared the statistics of cases treated before the introduction of the bath, with those treated after. For this purpose I have used Dr. Bell's statistics from 1870 to 1879. He reports 600 cases, with a mortality of 10.4 per cent. In the period of 1892 to 1898, 600 cases were treated, of which 2-3 or 3-4 were submitted to the cold bath treatment, (three out of four physicians using this treatment in the General Hospital), and the mortality was 9.4 per cent, showing a diminution of 1 per cent. in the later series of 600 cases. This result does not seem encouraging, when we consider that the hygienic conditions are now better than they were formerly; and I am disappointed with the results in finding they have not improved more. I see in a number of statistics reported that the mortality rates are not given previous to the use of the cold bath; with the exception of Hare, who is one of the few who compares results before and after the use of the bath. Osler and Wilson do not mention the mortality before the cold bath. We know that the mortality differs very much in different localities; and it is necessary to have the mortality rate for each separate locality.

Our results do not show a great lowering; but I can testify that it mitigates the suffering of the patient, and certainly what Dr. Stewart says can be corroborated.

So far as perforation goes, I think the most prominent symptom is acute pain in the abdomen, which marks the onset of perforation in probably more than half the cases, and we now teach our house physicians to summon the surgeon or physician in attendance when this symptom arises, at once. In the next few hours it is followed by the other signs of this complication. Where we can get an absence or diminution of liver dulness early before distension has set in, it is a valuable sign. It is only valuable when distension is absent, as distended bowels may produce marked diminution or even absence of liver dulness. I think Dr. Armstrong's results disappointing; but we do not, however, know what the results are in such cases; most men do not publish their fatal cases, but only the successful ones, so that the mortality is, no doubt, higher than has been given in the tables. When we consider the almost uniformly bad results of operation, we can hardly expect any marked diminution of mortality by surgical interference.

Dr. J. B. McCONNELL—Not having been able to review the recent literature of the subject, I am afraid I shall not be able to add anything new to the discussion, in regard to diagnosis, which has been in the past one of the most important features in the consideration of typhoid fever, on account of its many difficulties. The modern method of serum diagnosis has removed many of these difficulties. The only new point I have taken note of is the palmo-plantar symptom, a yellow condition of the palmer and plantar surface of the hands and feet respectively, which Quintin claims is always present, and that this skin peels off at the end of the fever. This would help in some cases where the serum test could not be applied. With regard to treatment and statistics, I think we should not place too great reliance upon the percentages of recoveries under different methods. Epidemics vary much in the character and intensity of the fever. Some recent authorities state that typhoid in late years is much less virulent than it was twenty or thirty years ago, and that the old mortality of 18, and the present one of 7, or 8, might not be less than we should expect without reference to any special method of treatment. I think that it is of the greatest importance in the treatment of these cases to get the patient into a perfectly comfortable condition, with nothing to annoy him, and to attend to the diet properly. As a rule I prescribe small doses of nitro-muriatic acid, combined with a little boracic acid, and syrup of orange, which is easily taken, and is refreshing to the patient. The acid may help digestion and serve as an antiseptic to the upper alimentary tract.

With regard to the cold bath treatment, while it is undoubtedly the most efficient means of combating the fever and preventing complications by toning the system, increasing the elimination of toxins, and of the hyperleucocytosis produced, I do not think it is absolutely necessary to plunge a patient into a cold bath every time the temperature rises to 102 1-2, according to the direction of Brand. In these milder ones, which constitute the majority of cases we have to treat, I find the cool sponging is sufficient. When the temperature rises to 104, or keeps up continually with slight morning remissions, I think then that the cold water bath is the best method of treatment. The easiest way to carry this out is to use the cold pack, as advocated by Fitz. The bed is raised at the head and a rubber sheet is placed under the patient, the body is wrapped in a sheet and cold water is soused on with a sponge. This, I think, gives the patient much less shock, and causes less disturbance, and reduces the temperature quite as satisfactorily.

With regard to haemorrhage, in a case which I had recently in the Western Hospital where there was a profuse haemorrhage and collapse, the treatment which was successfully adopted was to restrict the diet for several days, not a few hours as some recommend, to much below what

he had been getting before, and to use camphor and opium. I do not think that astringents are of much service. Lead should not be given, as it adds an additional toxic element; it is absorbed from the stomach as an albuminate, appears in the intestines as a sulphide, and has no effect in stopping haemorrhage at the bottom of a slough in the intestine. I think that opium is the only part of the incompatible lead and opium pill that we can expect any good from. Camphor and opium is a much better combination. Ergot is, I think, harmful rather than beneficial. In all kinds of medical haemorrhage a remedy that contracts the blood vessels generally, increasing the intravascular tension will increase the outflow where you have a lesion in any part, except the uterus. A vessel cut straight across might have its calibre lessened by ergot, but all haemorrhages in typhoid fever are rather from erosion on the sides of the vessel which it will open rather than constrict. The opposite treatment of nitro-glycerine or any nitrite, which dilates the vessels and distributes the blood under a lessened tension throughout the vessels, I think is more rational. I have had better results, in some recent cases of haemoptysis, from these remedies than from ergot or astringents. Owing to the wide distribution of the specific bacillus, intestinal antiseptics cannot be of much avail, even if any thing could inhibit the bacillus in this tract, which is improbable.

Dr. JAMES BELL—There is no doubt that perforation in the course of typhoid fever is the most important subject in connection with the treatment of the disease to-day. The medical treatment has possibly not reached its final stage; but, at any rate, everything seems to be pretty well looked into in that respect, as far as the physician can see at the present time. Perforation is responsible for more deaths, according to statistics of observers, than any other cause; and while it is generally admitted that some few cases get better without operation, it is an off chance, and no physician should submit his patient to that chance by neglecting operation. As Dr. Armstrong says, it is hard to say whether perforation has occurred or not. When perforation does occur, the operation must be performed early. I have not had any recovery after operation, but my cases were all operated on too late. Operation should be carried out within twenty-four hours, and the sooner the better. There may be a reservation here, that one should not operate on a patient in a condition of collapse, when he is actually dying; within a few hours he may have rallied and then the operation should be carried out as quickly as possible. The great point is early diagnosis, and there is greater difficulty in making an early diagnosis in typhoid fever perforation than in gastric perforation or in appendix perforation. The reason is that in typhoid fever the patients are more or less stupid and heavy, with high fever, and there is more or less discomfort about the abdomen, with distension. Very likely, the early

symptoms will not be marked at all ; but if one waits until what I may call the classical symptoms, distension and absence of liver dulness, and collapse are fully developed, he will have waited until the time has passed to do any good by operation.

I agree with Dr. Finley that there can be only one reliable early symptom, and that is pain. I think alteration in pulse and temperature is apt to occur about the same time, and I feel that in order to do any good in operating for typhoid fever perforation, there must be far less timidity about making the diagnosis, on the part of the physician ; and on the part of the surgeon in operating on an uncertain diagnosis.

Look back ten years and consider how appendicitis was treated, when the physician hesitated to consult the surgeon or recommend operation until he was sure that perforation had taken place. And the same was true with regard to the surgeon. To a less extent there has been the same history, in recent times, with regard to gastric operations. We must be prepared to open the abdomen and take chances of an unnecessary operation, when there is *prima facie* evidence, which the physician and surgeon agree is probably of the nature of perforation. The history of operative treatment has reached a stage in which there is no question of its having saved life that otherwise might have been lost. There is no doubt that to open an abdomen unnecessarily, in typhoid fever, is more serious than in any other disease, than when the patient is not suffering from disease which is serious in itself. I am pleased to hear Dr. Stewart's remark with regard to antipyretic treatment. I remember very well 20 years ago, when large doses of quinine were being used so freely for typhoid fever. I expressed some doubt of its value to some of the physicians of the General Hospital—where I was house surgeon, but it was the overwhelming opinion that such criticism as I showed was quite improper, that quinine was the remedy. I say this because physicians to-day have the fullest confidence in the cold bath treatment. Dr. McConnell is a skeptic ; but a change of opinion may take place in this respect. I do not know if it is so important ; but whether it is or not, the same cannot be said with regard to the antipyretic treatment by drugs in typhoid fever.

Dr. ADAMI—It has, I believe, been the general wish of your committee, that to-night, in discussing typhoid fever, attention should be drawn to its incidence in Montreal, its relative frequency here,—and it is painfully frequent,—its spread, and any possible local characteristics of the disease in recent epidemics. To this end we especially depended upon Dr. Wyatt Johnston with his peculiar knowledge of the subject gained in connection with the Board of Health, and with the numerous studies which he had made in connection with local epidemics. But his recent indisposition has made it obviously impossible for him to take an

active part to-night. The subject of etiology is so large and so important that it is most satisfactory to have his promise to introduce the matter at a later meeting. It will be well, therefore, that the discussion to-night be confined to the matter brought forward by Drs. Stewart and Armstrong, namely, the medical and surgical treatment of enteric fever, matter amply sufficient for a full discussion. But, this being accepted, I find all the ground cut from under my feet, for, as a pathologist, I came to say a few words upon etiology. Under the circumstances I trust that the meeting will not consider me over bold, if, forced to confine myself to treatment, I, as an outsider not in practice, venture to propound views upon practice.

Taking first the surgical treatment of typhoid: Why is it that one finds perforation to be so dangerous and operation so rarely successful here, in Montreal, as elsewhere? It was you, Mr. Chairman, who first indicated to me the reason. When, two session ago, I read a paper upon omental adhesions, you called attention to the fact that in typhoid such adhesions are practically never met with, and asked why this should be the case. At the time, it may be that I gave you a lame answer. But the question has often recurred to me, and, if I mistake not, I answered it when I discussed the subject of these omental adhesions more fully at Toronto last year.*

It is not quite correct to say that such adhesions are never found in typhoid fever. Very occasionally they occur, and I have met with them, just as very occasionally operation following perforation is successful. And the explanation of the absence of these adhesions is the explanation why operation so rarely results in recovery, namely, it is, that the type of inflammatory reaction in typhoid is low and enfeebled. Lowered leucocytosis is characteristic of the disease, and, following upon perforation, or injury of serous surfaces, in place of the healthy rapid exudation of abundant leucocytes, and development of abundant fibrinoplastic material in the region of injury, there is, almost, a thin serous exudate with small plastic powers. Instead, therefore, of the region of perforation becoming walled in, the contents of the intestine have a fatal tendency to infect the peritoneum generally; and after operation, the primary union in the parts is feeble; one must expect the wound to heal badly.

This, it seems to me, is the rational explanation why the results are so poor. Indeed, we must expect them to continue poor.

Now, to turn to the medical treatment. In his introduction to his son, Stephen Paget's *Life of John Hunter*, recently published in the "Masters of Medicine" series, old Sir James Paget makes the striking and paradoxical statement that, more especially in medicine and the biological sciences, *facts are not truths*. I do not quote the identical

* Philadelphia Medical Journal and this JOURNAL.

words for I have not the words by me, but this is the essence of the paradox. Sir James points out that the facts gleaned by one generation and serving as the basis of rational practice during that generation become so modified by the facts gathered later, that later they are seen in their true light of half facts. And, I may add, half facts are only half truths.

May we not apply this thought to typhoid and its treatment as well as to its etiology? Everyone, who studies, must admit, for example, that the cold bath treatment of the disease has done more to lower the mortality and alleviate the symptoms than any other means so far at all generally employed. Dr. Stewart's tables place this fact in a most convincing light. Does this fact, however, imply that the cold water treatment is the only rational treatment of the disease? May it not be only a half fact? Is it not possible that other means may be employed, in addition to cold water, to alleviate certain symptoms and to further lessen the mortality? For myself, from pathological considerations, I cannot but feel that though at first he overloaded his writings with hypothetical considerations about endosmosis and exosmosis, Dr. Thistle, of Toronto, has done yeomen service in directing forcible attention to the value of clearing the bowels during the course of the disease.

Whether there be constipation or diarrhoea the peculiar foulness of the typhoid evacuations is, shall I say, notorious. There must be abundant and abnormal putrefaction, that is, there must be, and we know there is, abundant bacterial growth in them. We know, further, that there is a greater or less number of open ulcers along the course of the ileum. Is it rational to permit, without an effort to arrest it, the absorption of toxic materials from the gut, the actual secondary infection of the system through these open wounds?

In a short notice in the *Lancet*, at the end of 1897, another member of a family already referred to, my old friend and pupil, Owen Paget, states the results obtained by him by what, at first thought, seems to be the utterly childish, if not absurd treatment of dosing the patient with *salad oil*—salad oil, by the cupful *per os* and *per anum*. Under most unfavorable conditions in Western Australia, without proper nursing aid and without hospital care, he, (I believe I state it correctly) brought through by this means one hundred patients without a death, when in the same town the hospital cases showed no lessening in the ordinary mortality. The explanation he afforded me recently, and it appears to be most sensible, is that salad oil is easily administered, the patients rapidly come to take it without trouble, it is a mild laxative, and at the same time acts usefully as a food stuff, by it the bowels are kept well cleared and are not irritated. In short, by this means is avoided the dangerous irritation of the bowels which constitutes the strong objection to mercurial and other purgatives, which otherwise would be useful. So soon as the stools are perfectly sweet he ceases to give it.

May it not be wise, therefore, to utilize to the fullest all the advantages gained by cold bathing and at the same time—whether using salad oil or other laxative, internal antiseptics, (if they are of the least use), or by any other means—to employ means to keep the ulcerated surface as free from irritation and secondary infection as possible? Assurance as to the value of any mode of treatment and loyalty to the same, is not incompatible with willingness, nay anxiety, to employ every rational means to arrest disease. And while to-night Dr. Stewart has especially dwelt upon the value of the cold bath treatment, and while he has been a consistent advocate of the same, as a colleague, I know that in his wards this principle is ever kept in mind.

Dr. W. E. DEEKS—I would make a few remarks in connection with my own experience with fevers. About what has been referred to here tonight, I think those who advocate the cold bath so strongly, ought themselves to have typhoid to have some practical experience, and possibly they would not recommend it so strongly. I think in the treatment of typhoid every individual is a law to himself, and has to be treated as such. There are some in perfect health who enjoy a cold bath, and others to whom the cold bath is distasteful. When I had typhoid—it was not very severe—a cold bath would have been misery. I have seen some patients shiver in the bath for a long time, and shiver after it was over, and I have never thought that they reaped the advantage from it they might have done. I do not think a patient who fears cold baths, and who, after being brought out chatters for fifteen or twenty minutes on the bed, gets benefit from them.

I think Dr. Finley referred to a very important matter in connection with the mortality. The mortality of typhoid has certainly decreased in recent years. Is it due to the cold bath treatment, or to improved hygienic conditions in our modern hospitals? It was a different thing to put a patient on a straw pallet, changed every week or two, to putting him on springs, and that itself ought to reduce the mortality.

I think there are some persistent cases of high fever where baths ought to be resorted to in private practice, but I have never done so, and I am thankful to say I have never lost a case. Where patients have headache and the cold pack did not relieve them, I have found that a few grains of phenacetine helped them temporarily, and tided them over the crisis.

About purgation and the remarks of Dr. Adami, I have never used salad oil, but I have used calomel. In my own experience, when I had typhoid, I felt stuffy and miserable, and the abdomen was distended. I asked the nurse for 3 grs. of calomel, and got relief from it. Dr. Stewart did not disapprove of it; and I used it afterwards on two or three occasions. When the patient is distended and the stomach full and he feels miserable, 3 or 4 grains of calomel give the greatest relief;

the abdominal distension disappears, and they have asked to have the same dose repeated. I have rarely even tried the cold pack to the head. The sponge bath, with either ammonia or alcohol, according to the financial condition of the patient, applied more or less constantly, was sufficient in every case to reduce the temperature to a moderate degree, and I think that the much vaunted cold bath is not by any means all that it is claimed to be.

Dr. J. M. ELDER—I quite agree with Dr. Deeks, from the standpoint of the general practitioner; I have dealt with typhoid off and on, as general practitioner, and had my fair share of it, though I have not had Dr. Deeks's results. I have had more than one case of perforation, and I have expected more. I think to put typhoid patients on one line of treatment medically, or one diet, everlasting milk, and nothing but milk, is slightly irrational. I do not think everyone can digest milk, and we should not be restricted to one thing. We neglect too much, and it is true of our hospitals where we follow out a routine practice, the personality of the patient.

I will not find any fault with the hospital statistics, but I think we cannot compare them with the results in private practice. The private practitioner ought to get the better results; but I do not think the private patient can get the attendance a hospital can give. The hospital patients are not in as good a condition as the private patients; they only come to the hospital two or three weeks after the disease has begun, they do not go to bed early, they are a poorer class, and their health is not as good very often as that of private patients.

Dr. D. J. EVANS—I have not had a very extensive experience of typhoid in private practice, but with regard to the diet of typhoid patients, I was struck about four years ago with the fact that a diet limited to milk entirely, more or less diluted, was nauseous to some patients, and I not infrequently found that the milk produced some bad effects. I saw some caseine curds in the motions, and that led me to modify the milk in various ways. I have fed patients on modified milk, and then on paps and gruels, etc., which had no bad effect, then I used malted milk and meat juice occasionally, and got quite an extensive dietary. About a year ago I noticed this was coming out in the journals, and that many were using this dietary. The result of my experience has been quite satisfactory.

With regard to the cold bath treatment, I have always tried it, because I was told, and saw in the General Hospital, that it is the best. In private practice one is not able to carry out this treatment satisfactorily; and where I have wished to produce the same effect, I have got very satisfactory results from the careful use of the cold pack, with, I think less discomfort to the patient. I have put them in the half-pack, the

trunk of the body wrapped in iced sheets, three to four thicknesses, and the feet kept warm, with hot bottles, and wrapped in a blanket during the time they are in the pack, and kept them 10 to 12 hours, as the temperature indicated. The patient very often falls asleep, and nervous symptoms subside. I can recommend this treatment as a very efficient substitute for the bath, and somewhat better than the sponge treatment.

SIR WM. HINGSTON—I was sorry I was not in time to hear the medical aspect of the question. In listening to the discussion, the fact forces itself on my mind that typhoid fever today is not what it was thirty or forty years ago; it runs a milder course, shorter in its duration by nearly a half. I recollect when typhoid was a disease of five or six weeks' duration; and now I hear of cases getting well in half, and less than half, that time.

I do not think that we have reached the best form of treatment, certainly the indiscriminate use of cold water has never recommended itself to my judgment. I share the opinion of other gentlemen, who have spoken to-night, that there are cases where cold water would be of service; there are others where it would be fatal. There are no two persons who have the same views with regard to the use of cold water. Cold water to me is torture; I like warm water. Two men who held opposite views on this subject were Dr. Campbell, formerly Dean of McGill, and his associate, Dr. Sutherland. Dr. Campbell never recommended the warm bath, thought it was foolish; Dr. Sutherland never recommended a cold one, and took the warm one. To have put Dr. Campbell into a warm bath, and Dr. Sutherland into a cold one, would have caused each of them great discomfort. If a man like Dr. Sutherland had fallen under my care, I should probably have put him into a warm bath, and continued it as good hygiene; if it had been Dr. Campbell, I should not have done so. The indiscriminate use of cold water is a mistake, and an act of cruelty; I have seen persons blue in cold water, and remain blue for some time afterwards, and not recover their normal color.

I think there is a huge mistake made in the matter of diet. The pouring in of enormous quantities of milk, giving persons, as they get weaker, an increased quantity of milk, far more than the stomach can digest, and far more than is absorbed, so that large quantities pass into the intestine, to my mind is not wise. I think it is Osler who says that the duty of the physician is to watch carefully the evacuations, and see that no undigested milk passes away. I suppose when persons get better from fever, a relapse from meat-eating may take place. In order to obviate that, physicians do not permit their patients to take meat, but they suggest to them to take large quantities of broth and beef tea

and bouillon. I think that question of liquid meats was disposed of nearly thirty years ago, and I am astonished that anyone recommends them today. It was found that they are incapable of supporting strength, utterly valueless, and even mischievous. What will you give? I would certainly say milk, with persons who are accustomed to take milk. There is as much difference in the matter of milk as there is in the matter of cold water. If you give some persons milk, in health, you may produce constipation, in other cases, diarrhoea. Give milk to a person accustomed to milk, not to those to whom milk is disagreeable, and nauseating. It has always appeared to me that crushed wheat, rejecting the fibre, and using it as you would gruel, is perhaps, the best.

A word as to purgatives. I must appeal from Dr. Adami, to Graves, who contented himself with giving a laxative at the very onset of the disease, but never afterwards. If one proportions the food to what the patient can dispose of, there will be very little that will pass down the intestinal tube.

With regard to surgical interference, I think, unhesitatingly, one should cut into the abdomen, whenever there is the slightest evidence of perforation; and I do not think that it is always difficult to establish when perforation has taken place. Pain follows a very rapid course, and the pulse will be somewhat clear; but even if one does cut, and not find perforation, I do not know that a great deal is added to the risk of the patient. It is better, when one is in doubt, to operate, and I should be disposed to operate early. But the result has not been very encouraging.

DR. F. R. ENGLAND—Just one word which has not been touched on. Purgatives have been spoken of, but I do not think that anything has been said with regard to enemata. I remember that the late Dr. George Ross taught that purgatives were very dangerous; and I recollect one case where a dose of castor oil had apparently caused death in a patient who was doing well, with the exception of a little constipation. He taught that in cases where constipation was the rule they were generally favorable cases and got well; but if the bowels caused anxiety, and he desired to act on them, he would prescribe a small enema of glycerine and warm water. I have generally followed that plan since, with very satisfactory results. I may, perhaps, refer to a very serious case I was asked to see, a few weeks ago, where perforation was supposed to have occurred by the attending physician. It was a young woman, 18 or 19 years of age, in whom symptoms had rapidly become serious. There was present a great deal of distension, and the bowels had not been moved for seven or eight days. The pulse was rapid and there was a great deal of pain. Taking the whole clinical picture into account, I was reluctant to open the abdomen in that particular case, and as-

sumed the responsibility of waiting and watching. Fortunately, the patient recovered. The symptoms immediately improved, after I had succeeded in getting a very copious discharge from the bowels, which I effected by repeated moderately small enemata of glycerine and warm water thrown into the rectum and colon. I considered well, before deciding against operation. I was not positive that perforation had occurred, and I felt that if I opened the abdomen with the girl as sick as she was, that the result would be very likely fatal. Not very long before, I was present at an operation where appendicitis was supposed to exist. Laparotomy was performed, and the case was found to be typhoid fever. There was no perforation, and death occurred. I was struck with what Dr. Adami said. We are bound to consider it as it is borne out by Dr. Armstrong's experience in the cases which he has operated upon. Dr. Adami tells us that he believes that the important reason for the great mortality in these cases where operation is performed for perforation, is due to the fact that there is a great want of the fibro-plastic exudate thrown out, and that the powers are lowered, the patient is in a bad state to stand operation.

While Dr. Armstrong tells us that the intestine united well, he says the abdominal wound was slow to heal, and after twenty-one days he scraped the abdominal wound, and it again failed to unite, because, I believe, the exudate was not thrown out which produces union. It seems to me in severe cases we cannot expect any very great advance in the results obtained, in those cases, from surgical treatment. Of course, there is no question, it is the only means offered to a patient; nevertheless it will continue to be a grave condition, and one where I think no very brilliant results can be expected.

DR. WESLEY MILLS—It seems to me that this discussion is characterized by one thing at all events, namely, healthy difference of opinion, and seeing that the history of medicine is rather characterized by a tendency to follow what is new and restricted, rather than some broad principles, I think it is to be welcomed. I suppose we are all trying to get at some general line which will guide us in details; I could therefore have heard with pleasure the *rationale* of different methods somewhat more fully dealt with. The popular method of treatment by the cold bath is one about which I have never heard a perfectly satisfactory explanation. The difference of opinion seems to be not about the feasibility of the use of cold water, but the particular method of its use. Now, in reality, as follows from what Sir William Hingston and others have said, the personal element and one's habits would lead one to expect that such difference of treatment should prevail. I suggest that the different expression here tonight is more apparent than real, it is one of detail rather than of principle; and as a physiologist looking for new

light as to principles, to apply to the living body, I have had to try and build up a certain interpretation for myself. When one considers the use of cold water to the sleepless, to the weary, to the insane, and the use of baths generally, and compares it with the effect in typhoid fever, it seems to me that one can strike a guiding principle. If I am right the teaching of the multitude of investigators on the nervous system is that we can no longer look to regeneration originating independently; they are all related to ingoing impulses; and I have long entertained the idea of the relation between function and nutrition. But I can understand why the use of cold water should so affect the nervous centres that the nutrition should be profoundly affected thereby.

Now, Dr. Armstrong has very clearly brought out the fact, I think, from his experience, and that of others, that not only is typhoid not a disease of local lesions, but one which affects the vitality of all the tissues; and if that is so, and this treatment of cold water affects the centres which preside over nutrition, it must be a sound principle. But I think there is need of greater conservatism in surgery, if I may venture to express an opinion, with the facts before us; and that also seems to be a point in the history of surgery, a return to greater conservatism in some respects, at all events.

But with regard to diet, I think we should be aware of what I may venture to call our profound ignorance on the subject of digestion. I think we do not realize fully the depth of our ignorance; I do not think that we take into account the separate transitions which we name separately, but which are small parts of one thing.

Now, for example, the digestion of a fluid like milk is affected by its temperature, as it is in my own case. I may take a little milk and it may upset my digestion, or quite the reverse, according to the temperature. I have never heard the temperature referred to with reference to the typhoid patients. It may be worthy of consideration, both as regards a good tonic effect and otherwise; so that this plea for a less restricted diet seems to me as being on a good, sensible and physiological foundation, that is to say, with such a limited knowledge of the digestive process, and such a defective knowledge of individuals to meet this case. For instance, some think that milk is taken directly into the system, and I am not sure that they are not right. But here again there is not really so much difference of opinion as there seems to be. As I understand, it is not a question of liquid or of solid diet, but as to whether there should be a greater variety of diet, and certainly if this variety can be obtained without danger to the patient it is a good principle, because all are agreed that it is more important with the typhoid fever patient with what is long weariness to him, in the bad cases—that his comfort in

every little detail should be attended to, which means that his nervous centres should be disturbed as little as possible by things which are calculated to disturb it. So I would submit that this discussion has led to the conclusion that there is less difference of opinion as regards essential principles than might at first be supposed, and that the result of it will be to show that there may be variety with union.

DR. KERRY—In connection with the fibro-plastic exudate in typhoid it might be interesting to refer to the post-mortem condition of two of Dr. Stewart's cases. I happened to be in the Royal Victoria Hospital and I was pressed into service at the post-mortem. In the first case, in which the diagnosis for several days was not certain, it was thought it might be miliary tuberculosis or typhoid, and showed a very marked reaction. Patches were standing out a quarter of an inch from the intestine. In the second case there was scarcely any reaction, but there was a little patch up in the caecum, and there was a marked ulceration inside the intestine, which may account for the reaction.

DR. H. A. LAFLUR, *the Chairman*—In the first place, I would like to say something about diet. It has been apparently assumed, tonight, that most physicians who treat typhoid fever confine their patients to an exclusive diet of milk. That is an absolute mistake. I think I can speak for Dr. Stewart and myself. We do not pretend to confine our patients to milk. Maybe this was true ten years ago, but not now. I have jotted down a few things I allow at the height of the disease: Coffee, tea, thin gruel, egg-nog, any clear soup, koumiss—which is pretty fair diet. They are all fluid, or nearly so. I might have added jelly, and even in cases where patients refuse milk I do not refuse a soft-boiled egg, even at the height of the disease; so that an exclusive diet of milk does not refer to the general practice here. I think Sir Wm. Hingston has drawn a picture of the horrible; we do not drench our patients with anything except cold water, and that externally.

With regard to the bath, I think I was one of the earliest in America to advocate and use it. In 1890 I advocated it at Johns Hopkins in Baltimore. I had seen Wilson use it in Philadelphia, and I was so struck with the result of the treatment, although it had had a trial in Johns Hopkins, I decided to wait no longer, but subject the patients to it; and according to the subsequent statistics the results obtained fully justified it.

There has been a great deal said about the disadvantages, but not enough about the advantages—and perhaps the special advantages. It should be remembered that the treatment by cold bathing is, in the main, an eliminative treatment. It has been shown conclusively that the urine of patients subjected to the bath treatment is a great deal more toxic than other urine; which shows that the kidneys are stimu-

lated chiefly by the action of the nervous system.. That accounts for the fact that in any series of cases that have been bathed, we see fewer instances of toxemia. We may combine it with the internal administration of antiseptics. I quite agree with Dr. Adami that we have not reached the perfection of treatment ; but those that compare the two kinds of treatment, the expectant, and the bath, will certainly be struck by the lack of delirium in such cases. I remember in the hospital we used to have four or five delirious patients during the night ; but this has been practically abolished, and we may see only a little wandering delirium, and that very rarely. In many instances, the patients object to this bath. They also object to surgical operations, but that does not prevent us from operating when we think it necessary. To those patients who object to the initial cold bath, we begin with a graduated bath ; and I practically always do this with females. The first at 90 degrees, lowered to 80 ; the second at 80 degrees, and lowered to 75 degrees ; the third at 75 degrees, and lowered to 70 degrees, or 68 degrees. Under these circumstances, I find that, as a rule, patients take the bath very well. It is only the exceptional patient that gets blue and shivers, and then it is a sign to remove him. One should not point out all the disadvantages, without also pointing out the great number of advantages that other people have found in it.

DR. STEWART, in reply—The Chairman has saved me from replying to a good deal that has been said. There are other ways of using water besides the cold bath, but they are for the most part poor substitutes. Of course, sponging with ice cold water does reduce the temperature considerably, but in the cases I have used it in, the patients complained more than they did of the cold bath. I am sorry I am not eloquent to preach about the advantages of the bath ; but the figures I showed to-night are quite eloquent, and I think anyone with extensive experience—and you need extensive experience—must be convinced of the advantages of that way of treating typhoid fever, the marked change it makes in the appearance of the patient is enough to convince the most skeptical. To-day you rarely see a delirious patient under the cold bath treatment—in fact, you might go through a ward, and you cannot tell whether they are suffering from typhoid fever or not : which is not the case under the expectant treatment. If that is not evidence, I do not know what some people need to convince them of it.

I was going to say that all the surgeons here to-night were in accord about the advisability of early operation in typhoid fever, as indicated by the onset of sudden pain. If a man were to rely solely on that in the months of August and September, I expect the surgeons would be kept pretty busy opening the abdomen, because abdominal pain is a very frequent symptom. Everyone recognizes the importance of early

operation ; but you do not want to be opening abdomens, and not find the intestines perforated. Whether it is not possible to employ other measures in conjunction with cold bathing, which will be effective in further reducing the mortality, is, of course, a great question. As I pointed out in my paper, the chief influence of the cold bath is in reducing the mortality from other causes than from perforation and haemorrhage. If you can get anything that will have an equally good effect on the prevention of these two conditions, you may say good-bye to typhoid fever, but it is doubtful whether we shall attain to that degree of perfection. I expect that the first and most marked advance will be in some antitoxine treatment. I think that is the direction in which we ought at present to look.

DR. ARMSTRONG. in reply—I would like to draw Dr. Stewart's attention to the fact that I did not rely on one of the symptoms, but on several symptoms and the consideration of each, and from their consideration collectively, added to the steady appearance of the leucocytes.

There is only one other point I did not think of in my notes. In some of these cases, in operating for a perforation, I have found a number of other ulcers very thin, not perforated. I put a row of sutures over them, with the view of preventing a perforation at that spot, which, I think, is a very good practice.

HAEMORRHOIDS IN CHILDREN, WITH REPORT OF A CASE.

BY

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“Do haemorrhoids occur in young children?”

Such was the question, simply put, which appeared in the *Gaz. des Hopitaux*, of March 1, 1873, apparently inviting a symposium of opinions from the surgeons of the day. Lannelongue, then a young man, had declared in his clinic that he had observed the condition in a young child. The following number contained an answer from Bouchut, which is interesting enough to quote:—

“No,” he writes, “children do not have haemorrhoids any more than they have varicose veins. For the past twenty years children have been brought to me who were said to have haemorrhoids, because of bleeding after defaecation, or because of a small anal tumor. All these cases were errors in diagnosis. . . . Up to 12 or 13 years of age, I know of no authentic observation of haemorrhoids; and I believe that cases of this nature are all to be referred to rectal polypi.”

Another interesting opinion was that of Gosselin, “*Leçons sur les Hémorrhoides*,” 1866, who remarks:—

“I have found in some works indications of haemorrhoids in children, but the details are too meagre to assure oneself that something else was not the matter: e.g., rectal polypus. We must not forget, in fact, that up to our own day, men have admitted the existence of haemorrhoids without making local examination, and simply because there was present either bleeding from the anus, or pain during defaecation. I will believe in haemorrhoids in children when I shall have seen them, or when a serious observer, after a careful examination, shall have affirmed that he has seen them.”

I have been at the pains of finding and quoting these opinions, (though they are shared probably by no surgeon of the present generation), inasmuch as, besides being of some historical interest in themselves, they serve to indicate the comparative rarity of the condition. The literature of the subject is, in fact, scant. I have been able to find only two other references previous to Bouchut's time. Of these, one is a sort of clinical note, by W. Krimer, of Aachen, (*Medicinisches Conversationsblatt*, 1830, No. 18, p. 142.) who claims to have observed haemorrhoids in children in five cases, from 1 to 4 years of age. The other is by A. J. de Montégure, (“*Des Hémorrhoides*,” Paris, 1819, p. 79.) who says the condition is not very uncommon, and cites in confirmation Wenceslas

Truka. The latter had reported 39 cases of haemorrhoids in children below the age of 15 years.

Neither of these, however, give any indication of having made local examinations, and their cases are probably to be put into Bouchet's class of "errors in diagnosis."

Coming now to more recent literature, we find hardly anywhere anything beyond a mere mention of the fact that haemorrhoids do occur in children, but are very rare. Ogston and Vincent, (*Lancet*, 1883, I., 8-9), report a case in a child 3 days old. It was apparently an inflamed external pile. Dr. Ogston, in a note appended to the report of this case, instances another example in a child of four months, "in which none of the usual predisposing causes were present—portal congestion, liver disease, and overloading of the rectum, with hard faeces." Keating says they are "very rare in childhood." Ball had seen "several cases in quite young children." Wharton, of Philadelphia, had observed "one case at 5 or 6 years of age." Holt says the condition is "not often seen in children. . . . may occur as young as 3 to 4 years. . . . The piles are generally small and external. Bleeding is usually slight."

Starr had "seen several in young children. One at 3 years of age was so marked as to necessitate operation."

Allingham is said to have reported a case, but I have been unable to find it.

This case occurred in Dr. Bell's service, and the case-report is as follows:—

Patient, a girl aged 8, was admitted on the 13th December, 1897, complaining of bleeding from the bowel. According to her mother's account, her trouble dated from about five years previously, when bleeding on defaecation was first noticed. It came on about a week after a fall from a gallery, about twenty feet high, upon bare ground. There were no serious immediate consequences of the fall. Blood came away usually with stools, but occasionally also in the intervals of defaecation. She frequently seemed to have griping pain during the act. The amount lost was never large. Since onset, bleeding had been present more or less all the time, save for remissions of various periods at irregular intervals. Two years ago had been free for about a year. She was never confined to bed, and never had serious pain with the trouble. For some time before entrance, she had been dizzy and faint at times. No definite history of chronic constipation, although the mother thinks child was sometimes constipated, and the child herself says she was.

Personal History.—Had whooping-cough and measles when a baby. Since then, always been in the best of health, though counted "not strong."

Family History.—None of tuberculosis, cancer or syphilis.

Present Condition.—A fairly well-nourished child, but small for her

age : apparently in good general condition. Blood, in variable quantities, usually of a dark fluid character, sometimes bright red, is seen to come from the rectum after defaecation. Quantity, at most, is about half an ounce (seen once), but is usually very much less.

On digital examination, nothing is felt. Vulva and vagina look normal, so far as visible. On palpation of the abdomen, nothing abnormal is made out.

The liver is normal to percussion and palpation. None of the other organs or functions give evidence of abnormality. On examination under ether, small but distinct venous piles were found inside the anus surrounding the lumen of the bowel, not inflamed, but bleeding readily on touching.

She was discharged seven weeks after entrance, for the last three weeks of which she had had no bleeding. The hæmorrhoids were demonstrated easily on several occasions, without the use of an anaesthetic. Her general condition remained excellent. She had no treatment beyond that of securing a free and soft stool every day.

The conclusion seems warranted that we have here a case of bleeding hæmorrhoids in a child, beginning at the age of three years and lasting till the present time. Apart from the age of the patient, the interest of the case would appear to pertain mainly to the etiology of the condition. Some cause of circulatory disturbance is said to be usually at the bottom of the trouble—in children as in adults. Cirrhosis of the liver and chronic constipation are the main etiological factors accused. In the present case there was nothing of this nature to be made out, save a very dubious history of constipation. That her attack of whooping-cough could have induced the trouble is certainly unlikely, and must remain matter of mere speculation.

There was nothing hereditary in the case; a factor which, by the way, is frequently enough found in histories of circulatory disturbances generally and hæmorrhoids in particular.

The case was seen again two weeks ago. There have been only two recurrences of bleeding since discharge, slight on both occasions. General health has remained very good.

RESTORATION OF THE NORMAL UTERO-VAGINAL ATTACHMENT IN PROLAPSE OF THE VAGINA.

BY

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The operations heretofore described for the cure of rectocele, or cystocele, and prolapse of the vagina, have been rather disappointing to the gynaecologist on account of the recurrence of these conditions after a few months, with the same troublesome symptoms.

To aid in the relief of these conditions, the operation here described has been performed by me, during the last five years, in a number of cases, and in none of these have I seen a recurrence.

It will, I believe, be found to be a valuable adjunct to the ordinary methods in use for these cases, and if properly performed, will, in the majority of cases completely restore the normal condition without any further plastic operation on the upper vagina.

To fully understand the mechanical reason for this operation, it is only necessary to notice carefully the ordinary case of cystocele, or rectocele, with prolapse of the vaginal walls, and to compare this pathological condition with the virgin condition. In the nullipara we find the utero-vaginal attachment high up, the cervico-vaginal vault well defined, and the elongated cervix extending into the vagina.

In the case of prolapsus, we see the cervico-vaginal vault obliterated, the cervix shortened as to its vaginal exposure, and the attachment of the vaginal wall about at the level of the external os.

This is caused by the stripping down of the vaginal attachment from the uterus, during childbirth, until the cervico-vaginal attachment exists only at the extreme of the cervix, instead of being attached higher up.

The operation suggested is simply the restoration to their natural position of the parts, and the reattachment of the upper vaginal wall to its normal position on the uterus, and by this means reducing the prolapse of the vagina.

Although somewhat more difficult of performance than the ordinary plastic operations for prolapse of the vagina with rectocele and cystocele, it repays all trouble by the better results, and more lasting benefit to the patient, and is, I believe, the only perfect operation for the relief of this troublesome condition.

The patient being in the lithotomy position, the operation is performed as follows: The cervix is seized and drawn down, and an incision is made around the cervix, at the junction of the vaginal attachment, down to the muscular tissue, just as in the operation for

vaginal hysterectomy. The tissues are now dissected from the muscular wall of the uterus, up to the normal level of the vaginal vault, which is opened as far as the abdominal peritoneum, which is pushed up, care being taken not to enter the abdomen. This is done all around the cervix. The haemorrhage is slight and easily controlled.

A short, curved needle, threaded with chromicized catgut, is now passed well into the tissue of the detached vaginal wall, posteriorly, but not including the mucous membrane, and carried around longitudinally for about one inch, before emerging. It is then passed deeply into the muscular tissue of the uterus at the upper border of the denuded area, and brought out at a point opposite the point of entrance, into the detached vaginal wall.

This is repeated until the cervix is surrounded ; the sutures not being tied until all are placed.

They are now tied, and the detached vaginal wall is thus replaced high up, with this row of sutures.

Care must be taken not to injure the ureters or bladder in placing these sutures. The mucous membrane of the vagina and cervix are now united by a running catgut suture, and the operation is completed. We have now our natural cervix and our natural attachment of the parts restored. If any narrowing of the vaginal canal is required, any of the ordinary operations may be used as an adjunct to this method, but in the great majority of cases, this operation, if properly performed, is all which is required, and is much more permanent in its results than the ordinary methods.

Case Reports.

COMBINED CARCINOMA AND EPITHELIOMA OF AN OVARIAN DERMOID CYST.

BY

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AND

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The patient from whom this tumour was removed entered one of the medical wards of the Montreal General Hospital in September of this year. She was an unmarried woman, 50 years of age, and complained of swelling of the abdomen and shortness of breath.

Menstruation was first seen when she was fifteen years old and had recurred regularly each month until she was 42, since which time she has seen no flow. This latter was always moderate in amount, painless, and lasted for four or five days. No history could be obtained of any pelvic trouble, up until last March, at which time the abdomen began to enlarge and it has continued to do so until the patient was operated upon.

I first saw her towards the end of September, at which time the abdomen was nearly filled by a smooth ovoid swelling. A clear note could, however, be obtained in both flanks, and both hypochondriac regions, as well as over the left renal and epigastric regions. The position of the dulness was not altered by change of position of the patient, a vague feeling of fluctuation could be made out on careful palpation. On making a vaginal examination, the hymen was found to be lacerated, the vaginal walls contained the usual rugosities of a nulliparous vagina, and the cervix, which also possessed the usual characteristics of a nullipara, could be felt high up. The fundus uteri and both of the appendages appeared to be too intimately incorporated into the tumour to be felt. A diagnosis of ovarian tumor of a malignant nature was made and an immediate operation advised. The patient was not transferred, however, to the gynaecological ward until October 10th, some three weeks

(*Read before the Montreal Medico-Chirurgical Society, Nov. 21st, 1898.)

after the previous examination. By this time the growth had increased to such an extent that no clear percussion note between it and the liver could be made out, and the patient had lost ground rapidly. Her abdomen measured forty-four inches in circumference at the level of the umbilicus, although she was very much emaciated, with an anxious expression of face. Her body was covered with a fine perspiration. Her respirations ran up to 32 per minute, and her pulse was 108, and of poor volume. She suffered greatly from thirst, but her appetite was good. There was no vomiting or other digestive disturbances to be observed.

As it was probable that the malignancy was confined to the tumour, it was decided to perform an exploratory coeliotomy and remove the whole growth if possible.

On opening the abdomen it was seen that the tumour had pushed the omentum and bowels upwards, and to the left. The abdominal walls were too tightly drawn over the tumor to allow of thorough exploration for adhesions, but the only ones within reach were so easily separated and the tumour had grown so rapidly that it was hoped that no very dense ones had formed. The cyst, therefore, was punctured and fully one hundred and twenty ounces (3cxx.) of thick grumous fluid, containing caseous material and hair, were allowed to escape, care being taken not to allow any to enter the peritoneal cavity. The dermoid nature of the tumour was now apparent and on further exploration, of the lower attachment of the mass, it was learned that it was the left ovary which was diseased, and that the pedicle, consisting of the uterus and broad ligament, was twisted half way round. A large solid mass still remained and could not be withdrawn from the abdomen, owing to dense adhesions to the upper part of the left wall of the abdomen, the omentum, the under surface of the right lobe of the liver, the right anterior abdominal wall and the intestines. The omentum was tied off and divided across, and after considerable trouble the other adhesions were divided, ligatures being frequently required. The mass was then lifted out of the abdomen and the pedicle clamped. The pedicle was then cut across the distal side of the clamp, after which it was secured by a series of chain sutures (catgut), and the clamp removed. The abdominal cavity was then carefully cleansed with swabs and flushed out with saline solution, as much as possible of this being left in the abdomen. The wound was then closed by two rows of sutures, continuous catgut for the peritoneum and silk-worm gut for the fascia and skin. Just previous to the operation, the patient was given one pint of saline solution per rectum. Although the tumour was emptied very slowly, the process was followed by collapse, the pulse at the radial not being perceptible, so 1-60 grs. of strychnine was given hypodermically and one pint of saline solution was injected under the breast, which

procedure produced a sudden and marked improvement in the patient's condition. Altogether she received three doses of strychnine, gr. 1-60 each, during the operation, and she had another saline enema upon being removed to her bed, as well as two others during the night. For the next two days, the patient received nutrient enemata, consisting of peptonized milk, $\frac{1}{2}$ in. and brandy, $\frac{1}{2}$ ss every three hours. During this time her pulse was very poor, and she vomited small quantities of dark blood-stained fluid. For the first four weeks after operation, the patient did very well, sitting up in a chair on the 26th day, and leaving the ward on the 31st day after operation. I am sorry to have to add that the patient died one week after leaving the ward.

The question may be asked, "was the operation justifiable?" I think that it was. The patient would certainly have died within one week or ten days of the date of her admission to Ward G. if the tumour had not been removed, and it was utterly impossible to determine the extent and density of the adhesions until a stage of the operation had been reached, where the friable cancerous tissue had been torn in several different places, when it would have been more dangerous to retreat than to advance.

The diagnosis was comparatively easy. Tumour of the liver or spleen could be put to one side, as there was no jaundice, as there would probably have been in the case of hepatic trouble, and when first seen, there was a distinct tympanitic area between the tumour and the structure above it. A tumour of the pancreas would not have been so large, would have been more centrally situated, (as also in the case of an omental tumour), and would have caused more digestive disturbance. If the growth had been of renal origin, there would have been some urinary disturbance, and the uterus would rather have been depressed than elevated, as it was. There is no way, however, to differentiate a dermoid from any other kind of ovarian cyst, with semi-solid contents, in a woman of this age. All dermoids are probably congenital and may start into activity at any period of life, whereas it is doubtful if the ordinary ovarian cystomata are present at birth, except upon very rare occasions. Therefore, if you have a cystic pelvic tumour present in a young child, the chances are that it is a dermoid, while in the adult the case is reversed. In addition to the extreme rarity of the condition of a dermoid tumour of the ovary becoming the seat of carcinoma and epithelioma, a point worthy of note is the absence of any fluid in the peritoneal cavity, although it is usually present in cases of malignancy of any of the abdominal organs.

Pathological Report.—The tumour is a large irregular-shaped mass, measuring 18 x 15 x 14 c.m., weighing 1,570 grms. The surface is markedly uneven in outline and nodular, the peritoneal covering being

greatly thickened and very haemorrhagic. On section, it is seen to be composed of a series of large cysts whose walls are markedly thickened, in places measuring 5 c.m. These walls are composed of a soft, whitish-looking infiltrating mass, with interlacing bands of glistening fibrous tissue. On scraping the surface, a juice containing epithelial cells is obtained. The cyst contains a large amount of thick, oily, flocculent fluid, as well as two large rounded masses of hair, about the size of large apples. At one point three teeth, evidently one canine and two molars, are found embedded in its walls and projecting into the lumen of the cyst.

Microscopically.—The tumour is seen to be composed mainly of epithelial elements, which infiltrate extensively the fibrous tissue stroma. Multiple pearl nests are found in these areas. At other points the epithelial cells are arranged in alveolar and tubular forms, as in carcinoma, with large bands of fibrous tissue surrounding them. A large amount of adipose tissue is also present. The vessels throughout are numerous, and engorged with blood, and in places surrounding these are a large number of small, round cells.

The tumour is, therefore, an ovarian dermoid cyst, with epitheliomatous, and, in some places, carcinomatous infiltrations. It also shows evidences of acute, and in some places, sub-acute, inflammatory reaction.

In reviewing the literature upon the subject, there were found only ten cases of malignant growth involving an ovarian dermoid cyst, in only one of which the two conditions, epithelioma and carcinoma, are combined, viz.:—

Coley (J. M.) Case of Scirrhus of the Ovary, in which was found an adipose tumour containing hair and teeth, in a patient who died in the fifth month of pregnancy.—*Edinb. M. and S. Jour.*, 1810, VII., 50-55.

Forget. Hydropsie, enkystie, cancer, kysto-pileux et dentaires des ovaires.—*Gaz. Meds. de Strasb.*, 1848, VIII., 169.

Unverricht (H.) Sarcomatosis dermoid des ovarium mit secundärem uterussarcoma.—*Breslau Aerzil. Zisch.*, 1878, V., 15-18.

Van Schröder. Communicatio inter duodenum et cystidem dermoid ovari d. ex. carcinon, epithel, cyst.—*Aerzil. Ber. d. k. allg. Krankenh. zu Wien.* (1882), 1883, 27.

Babinski. Deux cas d'épithéliome pavimenteux ayant vraisemblablement pour point de départ un kysto-dermoïde de l'ovaire.—*Bull. Soc. Anat. de Paris*, 1883, XVIII., 234-236. Also *Progrès Méd.*, Paris, 1884, XII., 29.

Heimelhorb (G.). Dermoid carcinoma ovarii dextri et dermoid ovarii sinistri.—*Med. abozr. Mosk.*, 1886, XXVI., 257-261. Also *Transl. Centralblatt f. Gynäk.*, Leipz., 1886, X., 569-571.

Pomorski. Cancerous dermoids.—*Centralblatt für Gynäkologie*, 1890.

Launelouque de Fouquet. Case of dermoid cyst with Endothelioma.—*La Semaine Méd.*, Paris, Aug. 10th, 1885.

Clark (J. G.) Carcinoma from the wall of dermoid cyst of the ovary.—*Amer. Jour. of Obstet.* Sept. 1898.

TUBERCULOSIS OF THE FALLOPIAN TUBES.

BY

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The following report of a case of tuberculosis of the Fallopian tubes is of considerable interest. The specimens from the case were exhibited before the society.

The patient, a woman aged 27 years, had been married for eight years, but had never been pregnant. Her chief complaints were pelvic pain, nervousness, indigestion and rapid emaciation. In July of this year she was exposed to cold and fatigue during one of her menstrual periods, and three days after this she was seized by a very severe pain in the right side of the pelvis. This was relieved by rest in bed and hot applications, but it recurred twice again before she came to town for operative interference. Her sexual history was unimportant, except that during the last four years she has had attacks of pelvic pain, beginning the day after the menstrual period ceased, and lasting for one day. No case of phthisis had occurred in her family, and examination of her chest yielded negative results.

On making a local examination of the pelvic organs, the os was found to be patulous, with soft margins. The uterus was in good position, but was very slightly enlarged. Through the left fornix a distinctly trilobed mass could be felt, the lower lobe being sensitive, and was diagnosed as the left ovary, surrounded by its tube, a small, and an elongated mass could be felt on the right side, i.e., an enlarged right tube.

When the abdomen was opened, the right Fallopian tube was found to be enlarged in two places, and to embrace the ovary which was healthy. The tube was removed, as was also that of the left side, both ovaries being left. The tubes themselves were not ligated, but were slit up for some distance, and the mucous membrane was stitched to the peritoneal covering, so as to ensure the tube remaining patent. The appendix was then removed, as it was evidently diseased.

The right tube contained two rounded swellings, with a constriction in the centre, consisting of simply the impervious tube. There was no adhesion of any kind whatever, to have caused this constriction. The proximal swelling measured 48 x 30 x 3 m.m., the distal one 35 x 35 x 30.

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On the right tube was a distinct inner dilatation, measuring 35 x 28 x 25 m.m., while external to this the tube was enlarged to the size of a lead pencil for 25 m.m. of its extent.

All of these dilatations contained caseous masses, and, although no tubercle bacilli were found, typical giant cells were abundant in the tubal walls.

The peritoneum showed no sign of tuberculosis.

The appendix contained about $\frac{5}{8}$ of grumous mucopus, and its walls were very much thickened.

The patient made a perfect recovery, rapidly gaining in flesh and strength.

TWO CASES OF TUBAL PREGNANCY : OPERATION—RECOVERY.

BY

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Surgeon to the Western Hospital,
Montreal, Canada.

My eleventh case of tubal pregnancy was Mrs. B., 33 years of age, to whom I was called in consultation by a medical friend on the 5th October. She gave me the following history: As a girl she had enjoyed good health. She had been married twice, the first time when twenty-one years of age. She had three children by her first husband, the last one six years ago. She married the second time two years ago, and three months after her marriage she began to complain of pelvic pain, and has never been well since. During these two years she was thought to have been pregnant several times; that is, her periods stopped for three months, and then came on with haemorrhage and severe pains. Menstruation had stopped for four months before I was called in. A month ago, and when she thought she was three months pregnant, she was taken with severe pain and a moderate flow appeared. She had to take to her bed and send for her physician, who attended her for about five weeks before I saw her. Four days before coming under my notice she was taken with a flooding and such severe pain that she became unconscious and does not know what came away. Her physician, who had already diagnosed disease of the ovaries and tubes, now came to the conclusion that there might possibly be a ruptured tubal pregnancy. I agreed with his diagnosis in every respect; a large mass, the size of a cocoa nut, could be felt by the vagina, and could even be seen protruding up under the abdominal wall, and I advised her removal in the ambulance to the Samaritan Hospital. As her pulse was a hundred and ten, her temperature 101, and as she was vomiting incessantly, I thought that I might safely delay the operation a little, until I could get her in a little better condition, although I was fully prepared to operate at a moment's notice if the pulse went any higher, indicating more haemorrhage. The uterus was pushed over to the left by the mass, and the right ovary was apparently imprisoned in

* Read before the Montreal Medico-Chirurgical Society, December 19, 1898.

the tumor, because the slightest pressure on the mass caused severe vomiting and pain, lasting for several hours. She was put on a stomach mixture and carefully fed until the 25th of October, when her pulse and temperature came down to normal. Her bowels were toned up by the administration of one-twentieth of a grain of strychnine three times a day, during the three weeks that she was waiting, and they were well emptied. On the above date, abdominal section was performed, a large incision being made, as the lump was large. On entering the abdomen a ruptured tubal pregnancy was found; and the omentum had cleverly come to the rescue by walling off the ruptured tube and blood clot, from the rest of the peritoneal cavity. On detaching the adhesions, which were quite firm, I came upon a mass of blood clot, with a foetus five inches long, slightly macerated, among it. This was carefully cleared out, and then the densely adherent right tube and ovary, together with the vermiform appendix, in one inseparable mass, was shelled out with difficulty. The ovarian and uterine arteries, the latter at the corner, were tied separately and the mass removed. The vermiform appendix was removed in the manner in which I always do it, namely, by cutting it off level with the cæcum, and the hole thus left, closed, as we would close a bullet wound, by two rows of Lembert sutures. The distal end of the appendix can still be seen, deeply imbedded in the mass of inflammatory exudate surrounding the ovary and tube. Although there was no bleeding at the operation, the pulse went up to 140, and the temperature to 101 that evening, but both were normal on the third day, and remained so since, now more than a month after. The nausea and vomiting stopped the day after the operation, although she had been vomiting almost steadily for five weeks before. No pain at all since the operation, has good appetite and feels well in every way. The left tube was very diseased and was removed, but the left ovary was allowed to remain, so as to avoid the discomforts of the premature menopause.

This was my eleventh case, all of whom recovered and are still alive and in good health.

My twelfth case consulted me at the Montreal Dispensary. She was a Mrs. C., 38 years of age, mother of six living children, the two last being twins, which were born years ago: before the birth of twins she had kept herself from having children for eight years, by taking large doses of senna and salts before each period was due. Several times during these eight years she had miscarriages at two or three months. She appears to have menstruated at the 7th of August, the flow lasting till the 20th August. This stopped then for seven weeks, until the 9th of October, when she began to flow freely, and the flow was accompanied with great pain. I sent her into the Samaritan Hospital, but she de-

layed until the loss of blood became quite serious, and it was not until the 23rd of November that she was operated upon. By this time the left tube could be felt larger than the thumb, but fairly movable. The uterus was dilated and curetted, although it was quite empty, but rather large, iodine and carbolic was applied to the endometrium very thoroughly. A lacerated cervix was also repaired. Then the anterior vaginal wall was opened, and the fundus, ovaries and tubes were brought out and inspected. The procedure was difficult, owing to the adhesions of the ovaries and tubes on both sides, and to the enlargement of the left tube. It was finally brought out, and tied off at the cornua of the uterus. A few cysts on ovaries were opened and the uterus was replaced and the vagina closed, one stitch taking in the fundus of uterus. She made an excellent recovery. On cutting open the specimen only blood clot is seen with the naked eye, but I will gladly hand the specimen to the pathologist of this Society for a careful search for chorionic tissue. It was generally remarked by the medical and nursing staff of the hospital, that this patient made a much more rapid recovery than after the smallest laparotomy. They all agreed that I would have completed the operation in half the time, namely, thirteen or fourteen minutes, by the abdomen, instead of half an hour, which it took by the vagina. But from the patient's point of view, the time was well spent, as she had no scar, no chance of hernia, and she has had much less pain and a shorter convalescence. Although I mentioned the possibility of tubal pregnancy, yet I was not at all sure of it, so I will classify this case as one undiagnosed before rupture and before operation. Out of the twelve, in five, I think, the abdomen was full of blood.

CARCINOMA OF THE OESOPHAGUS WITH FATAL HEMORRHAGE FROM THE SUBCLAVIAN ARTERY.

BY

F. G. FINLEY, M. D. AND D. P. ANDERSON, M.D;

James H.—A carter, aged 60, was admitted to the Montreal General Hospital on September 6, 1898, complaining of hoarseness and inability to swallow solid food.

He had used alcohol to excess for years, but was moderate in the use of tobacco. In April, of the present year, he began to suffer from a slight cough, and in June, he first noticed difficulty in swallowing solid food. He has been hoarse for six weeks.

Present Condition. He is a rather poorly nourished man, with a slight degree of anaemia. The muscles are soft and small, and the subcutaneous tissue scanty. There is complete aphonia, the patient being only able to speak in a whisper. Dr. Birkett reports that there is complete paralysis of the left vocal cord, and deficient adduction of the right. A No. 8 oesophageal sound was arrested 13 1-2 inches from the mouth, but a No. 7 passed into the stomach.

Apart from some arterial sclerosis and emphysema of the lungs there was no disease of any of the organs. The left radial pulse was noted as much smaller than the right.

On September 20th, the patient began to have evening elevations of temperature, began to complain of a dull pain behind the sternum, and the difficulty in swallowing continued.

Oct. 10. A No. 3 oesophageal sound was arrested eight inches from the teeth.

Nov. 4. Temperatures continue elevated, varying from 98 to 103. There was a severe rigor yesterday, the thermometer registering 105 2-5.

Nov. 15. Cough is more troublesome, but expectoration is scanty and not fetid. Repeated examination never revealed any tubercle bacilli. About this time the breath became offensive, and four days later this feature became so marked that he was transferred to an isolation ward. Septic temperatures, with occasional rigors, continued. Emaciation was marked, but not extreme.

Nov. 25. At 7 p.m. there was a slight attack of coughing, immediately followed by a profuse haemorrhage. He asked for a towel, then suddenly fell back, gave a few gasps and died.

Abstract of Autopsy—The body is that of a somewhat emaciated old man.

At a point 3 1-2 cm. above the bifurcation of the trachea the oesophagus only admits a small probe, and on its mucous surface there

is an ulcer 3 cm. in diameter, with an irregular base from which cauliflower-like masses project. Surrounding the oesophagus at this level is a firm mass about the size of a hen's egg. This growth extends to the left, and surrounds the left carotid and subclavian arteries, compressing these vessels and narrowing their channels. The growth is of very firm consistence, of whitish appearance, traversed by glistening bands, and exuding a cancerous juice. The adjacent lung is densely adherent and a gangrenous cavity about the size of a large apple is present at the apex of the lung, in close relation with the tumor. This cavity is filled with dark clotted blood, and a large division of the bronchus opens into it. There are several small cancerous nodules in the left lung, and small patches of broncho-pneumonia. On the wall of the subclavian artery 2 1-2 inches from its origin is a small circular perforation, 3 inches in diameter. This opening communicates with the gangrenous cavity in the lung.

The crico-artenoideus lateralis and posticus on the left side are markedly atrophied. Microscopical examination of the tissue from primary growth in oesophagus shows this to be composed mainly of fibrous tissue with extensive infiltration of epithelial cells, these being arranged in tubular and alveolar forms as in a carcinoma. The secondary nodules in the lung though of the same character, differ slightly in that the cellular elements of growth are more of an endothelial type.

Anatomical Diagnosis. Cancer of oesophagus, Gangrene of lung. Perforation of second portion of subclavian artery. Broncho-pneumonia and secondary growths in tissues of neck and epigastric glands. Cloudy swelling of organs. Perforative appendicitis and peri-appendicular abscess.

The diagnosis made during life was cancer of the oesophagus, followed by gangrene of the lung.

The presence of dysphagia in an elderly and somewhat emaciated man at once drew attention to the oesophagus; obstruction about 8 1-2 inches from the teeth, as found at the second examination, corresponded to about the bifurcation of the trachea, near which the stricture was ultimately found.

No obvious explanation was found for the fact that the sound first passed 13 1-2 down the oesophagus, and then was arrested. There was no stricture at this point, and there was possibly some error in observation.

In a case under the late Dr. Geo. Ross, one of us once passed an oesophageal sound into a large gangrenous cavity of the lung, and so failed to find obstruction in the oesophagus. At the autopsy some days later the communication with the lung had closed. It is needless to say that in the present case such a fallacy could not have occurred.

A feature of interest was the extreme narrowing of the oesophagus,

which only admitted a small probe. In spite of this there was never difficulty in swallowing fluids.

The association of paralysis of the left vocal cord with a small pulse in the left radial artery is a combination which, apart from aneurism, must be somewhat rare. The growth of the tumor around the artery, compressing and narrowing its lumen, was very obvious at the autopsy and satisfactorily explains the character of the pulse. Paralysis of the left recurrent laryngeal nerve is of frequent occurrence in cancer of the oesophagus, and occasionally both nerves are attacked, so that by itself this sign would not mislead the clinician. It is, however, quite conceivable that the combination of two such well known signs of aneurism might prove deceptive.

Death from haemorrhage is an unusual termination in oesophageal cancer. In our case the artery was adherent to the lung, and in close contact with the gangrenous area, and perforation occurred from extension of the necrotic process. The haemorrhage thus took place into the gangrenous cavity, and thence passed by the bronchi to the mouth. Taylor* has collected nine cases of fatal haemorrhage from the aorta, resulting from carcinoma of the oesophagus. In most of them death resulted from sudden and profuse vomiting of blood, and in nearly all cases blood was found in the stomach. In his own case there was a hole the size of a pea in the aorta; through this a portion of the malignant growth from the oesophagus had extended, presenting a shreddy filament free in the aorta. There was an ulcer opposite the hole in the aorta, probably produced by friction with the filament of cancerous tissue. There was no external haemorrhage, all the blood having found its way to the stomach.

In our case the haemorrhage was from the artery into the gangrenous cavity, so that none reached the stomach. The small peri-appendicular abscess was not suspected during life, and the rigors which occurred were attributed to an ulcerative process about the tumor. That this origin was probable is indicated by the facts that the rigors only occurred late in the disease, and were accompanied by cough, and later by fetor of the breath, and sputa.

* Guy's Hospital Reports, XLIX., 1892.

RETROSPECT OF CURRENT LITERATURE.

Gynaecology.

UNDER THE CHARGE OF WILLIAM GARDNER.

Uterine Fibroids and Cancer.

Babcock, W. Wayne, M.D., "The Co-existence of Fibromyoma and Carcinoma of the Uterus, with the report of three cases."—*Amer. Gynaecol and Obstet Journal*, Nov., 1898.

Howard Kelly states that the association is merely a coincidence, and that the growth of the one has no influence upon that of the other, but we should not altogether give up the theory formerly held, that fibromyoma may predispose to carcinoma.

The author relates three cases which occurred in the practice of Dr. Chas. P. Noble, one patient being sixty-three years of age, and a multipara, the other two being aged sixty and forty-eight respectively, and unmarried. He concludes that,

I. The frequent association of fibroids with adenoma and carcinoma of the corpus uteri is greater than would be, *a priori*, expected and relatively much greater than with the much more common epithelioma of the cervix.

II. That a coincidence of the two growths is favoured by their individual proneness to affect the nulliparous; but that the frequency of the association seems greater than is thus explained, or than is explained by the frequency of fibromyomas in all uteri after middle life.

III. That the endometrial hyperplasia, and the congestive and irritative influences produced by fibromyomas would seem to favor the development of the malignant tumour.

IV. That further investigation is desirable, before the old theory that fibroids predispose to cancers in the uterus is considered as disproved.

V. That the occasional serious errors of diagnosis from this association renders the routine examination of the endometrium desirable in elderly women with fibroids and imperative when there is excessive or odorous discharge, or abundance of scrapings.

Clinical Study of Hysterectomy for Fibromyoma.

Peterson, Reuben, M.D., "Clinical and Pathological Study of Five Recent Cases of Hysterectomy for Fibromata."—*Amer. Gyn. and Ob. Journal*, Nov., 1898.

The author reports a short series of five cases which are of interest chiefly on account of the number in which the tumour was accompanied by pus tubes, this complication being present in three out of the five cases, and of these the left side was affected in two instances. He concludes that the frequency with which this complication occurs will depend upon the surroundings of the patient, and the degree to which she is exposed to gonorrhoeal or other infection. The extent to which the presence of pus tubes will affect the post-operative mortality, will depend upon the variety and virulence of the organism present in the pus, the extent of contamination of the peritoneal cavity by this pus, and the resistant power of the patient.

Dr. Peterson prefers total to supra-vaginal hysterectomy, saying that it takes no longer to perform, and that better drainage is secured. He has kept track of most cases, and has seen no prolapse of the vaginal wall follow panhysterectomy. He limits myomectomy to cases where there are only one or two fibroid nodules; and where both appendages had to be sacrificed, would always perform panhysterectomy.

Irrigation of the abdominal cavity should be employed in cases where the cavity requires to be cleaned of blood-clot, etc., as saline irrigation is less injurious to the peritoneum than swabbing.

Drainage through the abdominal incision should be avoided as septic infection is apt to occur through the tube. When there are but few indications for drainage, the lower pelvic opening is almost completely closed, only room for a small strip of gauze being left, the gauze being removed on the third or fourth day. Where, however, the condition is more serious, the lower pelvic opening is not closed at all, but is lightly packed with gauze, the free ends of which project into the vagina.

Cystitis in the Female.

Etheridge, J. H., M.D., "Remedial Treatment of Cystitis in the Female."—*Amer. Gyn. and Ob. Jour.*, Jan., 1899.

The treatment of this condition may be divided into I. Constitutional and II. Local. The former consists chiefly in increasing the activity of the bowels and skin, rendering the urine bland and unirritating, and relieving pain, and vesical tenesmus. Purgation with salines is indicated and smaller doses of these

are effective if taken with hot water than if cold is used. By their diversion of the blood current towards the bowel, salines relieve the congestion of the bladder wall. The skin, which will probably be dry and harsh, should be rubbed with a rough crash towel twice daily, thus relieving internal congestion. Deranged systemic conditions should be sought for and relieved. The diet is of great importance, exclusive restriction to milk curing many cases, but one may give broth, the yolks of eggs, beef essence, etc.

The chemical reaction of the urine should be carefully watched. If too acid, give alkalies, such as salts of lithium, citrate of potash, etc. Large quantities of water should be imbibed so as to dilute the urine, and this may be rendered more agreeable to the patient if flavoured with fruit acid, which becomes an alkaline carbonate in the blood, and acts as a diuretic. Such demulcents as slippery elm or flax-seed may be used with advantage, in the acidulated water. When the urine is too alkaline, benzoic and boric acids may be used efficaciously. Germicides are useful in freeing the urine from micro-organisms.

Unclean catheterization is the cause of many cases of cystitis, so one should be very strict with their antiseptic precautions in passing the catheter. Where there is great tenderness, the urethra may be rendered less sensitive by the application of a 4 per cent. solution of cocaine before using this instrument. Before the medicated solutions are passed into the bladder, that organ should be washed out with saline or boric acid solution. The writer advocates nitrate of silver solution 1-10 to 1-2 per cent., in obstinate cases going as high as 20 grains to the ounce. Only a few drops of this solution are used at first, every second day, and then every day until a cure has been obtained. Other astringents such as tannin, sulphate of zinc, acetate of lead, infusion of hydrastis, potassium, and chlorate or perchloride of iron may be tried in obstinate cases.

Vaginal Hysterectomy by Cautery.

Byrne, John, M.D., LL.D., "Bloodless and Aseptic Vaginal Hysterectomy."—Amer. Gyn. and Obstet. Jour., Jan., 1899.

Since 1895, Dr. Byrne has been performing vaginal hysterectomy by means of the galvano-cautery knife, discarding the use of scissors or scalpel. He, however, clamped the vessels where these were divided, thus causing the patient considerable discomfort and pain. He now reports two cases in which the broad ligaments, including the ovarian and uterine arteries, were compressed by Skene's electro-haemostatic forceps, by which means, he was able to remove the uterus without the use of either forceps or ligature. In both cases, the patient made an uneventful recovery.

Canadian Medical Literature.

UNDER THE CHARGE OF KENNETH CAMERON.

[The editors will be glad to receive any reprints, monographs, etc., by Canadian writers, on medical or allied subjects (including Canadian work published in other countries) for notice in this department of the JOURNAL. Such reprints should preferably be addressed to Dr. Kenneth Cameron, 903 Dorchester street, Montreal.]

THE CANADIAN PRACTITIONER.

December, 1898.

1. The Surgical Treatment of Insanity. Ernest Hall.
2. Impressions Received on a Recent European Trip. Dr. Neu.
3. Pleurisy. George Hodge.

1. *Hall* refers to a case upon which he made a preliminary report last April. It was one of insanity of two years and ten months duration, which was relieved by removing the appendages. He now reports that nine months after the operation there is a continued physical improvement, the patient having gained thirty-five pounds in weight and has been restored mentally. Since treating that case he has examined eleven insane women with the result of finding abnormal conditions of the pelvic organs in nine instances. In six of these cases operative measures were adopted with results upon the whole satisfactory.

3. *Hodge* reports a case of pleurisy with effusion into both pleural cavities. He aspirated the chest twenty-one times, fourteen times the right and seven times the left, removing altogether 1054 ounces.

THE CANADIAN JOURNAL OF MEDICINE AND SURGERY.

December, 1898.

1. Plastic Induration of the Corpora Cavernosa Penis. M. J. Ahern.
2. A case of Bicornate Uterus Mistaken for Ectopic Gestation. W. J. Gibson.
3. Pulmonary Tuberculosis—Symptoms and Diagnosis. John Hunter.

January, 1899.

1. Club-Hand. B. E. McKenzie
5. Antitoxine in the Treatment of Diphtheria. A. B. Eadie.
6. Diphtheria, with Special Reference to the Laryngeal Cases requiring a Choice between Tracheotomy and Intubation. A. Gandier.
7. Infection and Serotherapy. Edward Laberge.
8. Therapeutic Suggestions for Children. Louis Fischer.
9. Ectopic Gestation—Abdominal Pregnancy. H. E. Vaux.
10. Genito-Urinary Instruments required by the General Practitioner. Fred. C. Valentine.

1. *Ahern* reports three cases of this interesting condition, char-

acterized by a localized induration of the fibrous sheath of the corpora cavernosa and also of the pectiniform septum. The first case was that of a man, 46 years of age, who presented no history of gout, diabetes, or venereal disease. On the right half-dorsal aspect of the penis, one-half inch behind the glands, was felt a hard, well-defined round plate, seemingly a foreign body, situated in the right corpus cavernosum and over which the skin moved freely. It had the shape, and was about the size of a ten-cent piece. A short distance behind this plate both corpora cavernosa are hard, round, nodulated, and tender. This induration extended backwards to the crura. Treatment by iodide of potash for some months had no effect.

The second case was that of a man of 64 years of age, who had gonorrhoea at the age of 19, but no history of syphilis, gout, rheumatism, or diabetes. On the dorsal aspect of the penis close to its root, could be felt a hard, wedge-shaped nodule, in the left corpus cavernosum, entirely independent of the skin, which was freely moveable over it. Behind this hard mass were several smaller ones of the same consistency. These indurated spots had never been painful nor were they sensitive under pressure. Potass. iodid. had no effect on the disease.

In the third case, a man of 50, there was in the middle of the penis a broad plate of bony hardness which extended forwards, and became narrow, reaching almost to the glands. The narrow part felt like a pipe-stem, and was grooved on its upper surface, which was flat. It occupied the septum. When young the patient had the habit of bending the penis during erection, and since then the organ has always had a tendency to double up when distended.

2. *Gibson* records the case of a young woman in whom pregnancy was suspected. On examination, the cervix was found softened, and an ovoid tumor lay to the left of the uterus, apparently continuous with it, and in size about two inches wide, and three inches long. It was thought that the condition might be a congenital lateral displacement of the uterus to the left, with a fibroid growth to the right, or more likely, it might have been a case of ectopic gestation. The great amount of pain, together with the history of a flow of a shreddy character, a couple of months before, gave a strong probability to the latter diagnosis. Again there was a possibility that it might prove to be a bicornate uterus. There appeared to be no means of determining between the two latter conditions, except by exploratory incision. Accordingly, the abdomen was opened, and the tumor proved to be the impregnated left horn of the uterus. On the right side was the other horn with tube and ovary. The abdominal wound was closed. Eight days later labor set in, and the foetus and placental structures were quickly expelled. The recovery was slow.

4. *McKenzie* points out that deformities of the upper extremity

are much less common than those of the lower. Club-hand is sometimes of the acquired variety, and depends upon cicatrices from burns, upon disease of the bones of the arm interfering with the growth of the lower epiphysis of the radius or ulna, upon diseases of the bones of the hand, upon fractures of the bones of the hand and arm, or upon paralysis. The most remarkable cases of the deformity are congenital, and are frequently caused by defects in the bones. Six very interesting cases are presented, three of them illustrating that well-marked variety where the radius is absent, and the hand presents defects both functional and anatomical.

5, 6, 7. These three papers relate to the anti-diphtheritic serum. *Laberge* discusses the pathology of infection, and relates the history of diphtheria and the results obtained by the use of the serums. *Gandier* acknowledges the brilliant results of the serum treatment, but sounds a note of warning against carelessness. Every case should be as carefully isolated, as carefully treated locally and generally, for cases of mixed infection occur which resist the antitoxine, and as promptly reported, as if there was no antitoxine. He also refers to those laryngeal cases which go on to stenosis, and urgently require immediate relief. Tracheotomy and intubation are compared, showing the advantages of each operation under different circumstances.

THE CANADIAN MEDICAL REVIEW.

December, 1898.

1. The Antitoxine Treatment in Diphtheria, with a Report of Four Cases. J. Andrew Hall.
2. Pain in Metritis. Ernest Hall.
3. The Treatment of Phthisis. J. Ferguson.

1. *Andrew Hall* reports several cases of diphtheria treated with antitoxine and mentions two points worthy of notice. First, the immunity a nursing mother seemed to confer upon the infant she nursed; and next, the failure to develop the bacilli in the laboratory from a swab taken after a spray had been used.

2. *Ernest Hall* discusses the characters of pain found in the various diseases of the uterus.

3. *Ferguson* in discussing the treatment of phthisis lays the greatest stress upon the maintenance of the highest degree of nutrition. Among drugs he holds that arsenic is of the greatest value as a means of arresting tissue waste, especially in young persons. He thinks that quinine and some mineral acid holds the first place in the treatment of the fever.

THE CANADA LANCET.

December, 1898.

1. Cocain Addiction and its Diagnosis. Stephen Lett.

January, 1899.

2. Serum Therapy. John L. Dawson.

1. *Lett* says that the importance of an accurate diagnosis in cocain addiction is second in importance only to that of opium addiction, and must be sought for in the physical and mental symptoms as well as the chemical analysis of the urine.

After noting the symptoms of the several stages, he describes the method of extracting this alkaloid from the urine of those using the drug. To a suitable quantity of urine (10 to 20 ounces) add sodium or potassium carbonate, until the mixture is very distinctly alkaline; let it stand for half an hour and filter; to the filtrate add two ounces of pure sulphuric ether, agitate quietly for two or three minutes, then allow to settle for half an hour; draw off the ether and to it add one ounce of dilute hydrochloric acid, thoroughly mix, place in an open dish and permit the ether to evaporate spontaneously; apply gentle heat to effect perfect solution of any alkaloid that may be floating on the surface or adherent to the sides of the vessel; let it then cool; the remaining liquid may then be tested for the hydrochlorate of cocain by any of the reliable tests for that salt.

A test is also given for the detection of morphine and cocain in cases of double addiction.

THE DOMINION MEDICAL MONTHLY AND ONTARIO MEDICAL JOURNAL.

December, 1898.

1. The Lepers of D'Arcy Island. Ernest Hall.
2. Two Months Work in Gynaecology and Abdominal Surgery. Lapthorn Smith.
3. Some Points in the Management and Treatment of Diphtheria, J. E. Hett.
4. The Hydropathic Treatment of Fevers. A. K. Sturgeon.

1. *Hall* gives a description of the British Columbia leper colony at D'Arcy Island, which is situated about a league off the eastern coast of Vancouver Island. All the lepers are Chinese, only one white man having been incarcerated there since the establishment of the station.

THE MARITIME MEDICAL NEWS.

December, 1898.

1. Higher Medical Education in Canada. R. MacNeill.
2. Fibroma Molluscum. Murray MacLaren.

3. Intra-Uterine Haemorrhage, Simulating Rupture of an Ectopic Sac. M. Chisholm.
4. Glioma of the Retina. E. A. Kirkpatrick.
5. Antitoxine in Ophthalmic Practice. G. H. Powers.

January, 1899.

6. Disorders of Nutrition in Childhood. W. H. Laughlin.
7. Sarcoma of Orbit Secondary to Intra-Ocular Growth. G. R. J. Crawford.
8. Case of Puerperal Septicaemia. J. H. Scammell.
9. Mesenteric Infarct with Intestinal Perforation. W. E. Ellis.
10. Six Cases of Tubal Gestation. A. B. Atherton.
11. Foreign Body in Lung for Eight Years. Simulating Tuberculosis. M. A. B. Smith.

2. *MacLaren* describes a case of *Molluscum Fibrosum* in a woman 25 years of age. One of the tumors was so large as to render movement difficult. It was attached and hanging from the left side of the abdominal wall and measured twenty-one inches in length and thirty-six inches in circumference. Its attachment extended from the costal margin above to the inferior spinous process of the ilium below, and from the middle line in front to the mesial line in the lumbar and upper sacral regions posteriorly. There was no pedunculation, the base of the tumor, on the contrary, spread outwards. There were many smaller nodules and patches of pigmentation over the body. The large tumor was removed. There was no capsule, and the growth was ill-defined, the attachments being to the fasciae, and muscular aponeuroses. Microscopically the structure was fibro-cellular.

3. *Chisholm* relates the history of a case illustrating the difficulties of diagnosis between recurring intra-uterine haemorrhages and rupture or abortion of the sac in a gravid tube. The patient six weeks after missing a period was taken with severe pain in the pit of the stomach and a slight haemorrhage from the vagina. There was elevation of temperature and abdominal distention. The condition was relieved, but the symptoms all returned with great violence several days later. On examination no tumor could be detected. Later, on the application of ice and morphia, was followed by relief, and a slight vaginal flow. Then the vagina was found filled with a tense sac about the size of a goose egg. It was necessary to rupture it to get at the decidua in the cervix. The sac was found filled with blood-clot, and red liquid. No embryo was found. *Chisholm* offers no explanation for the peritonitis and thinks that the haemorrhage was the result of degenerative changes in the decidua.

4. *Kirkpatrick* records the history of a case of glioma of the retina in a child two years and one month old. When first seen vision was found to be a little better than a perception of light. There was not the slight-

est sign of irritation about the eyes, tension was normal and media clear. An examination of the fundus of each eye revealed a degeneration of the retina. Six weeks later the eyes became painful, and at a glance in the pupil of the right eye, the pinkish white neoplasm was seen occupying a large part of the posterior chamber, and in the left eye a similar growth was to be seen, though not so far advanced. The disease was in its second stage with increased tension. Enucleation was advised, but the proposition was not received with favor. The third and fourth stages rapidly followed, and the child died within six months.

5. *Power* relates the history of a patient who had extensive granular conjunctivitis, vascular keratitis and corneal ulcers on both eyes. Thick pus exuded from the lids, and on averting the upper lid it was found stiff and covered with a diphtheritic looking membrane. He injected 500 c. c. of anti-diphtheritic serum with the result that next morning all the membrane had disappeared.

8. *Scammell* used the anti-streptococcic serum on a case of puerperal septicaemia with good result, when the ordinary routine treatment had no effect. She reacted well, her pulse became stronger, temperature dropped after each injection, delirium ceased, and the tongue became moist, but she suddenly died from haemorrhage from an abscess cavity.

10. *Atherton* reports six cases of tubal gestation upon which he had operated, with one death, from gangrene of the intestine.

11. *Smith* reports a case in which the symptoms and physical signs simulated closely tuberculosis, but were probably set up by a head of timothy grass which the patient had drawn into his lungs several years before.

THE MANITOBA AND WEST CANADA LANCET.

October, 1898.

1. The Wind as a Factor in Spreading Infection. R. S. Thornton.

1. *Thornton* says that typhoid fever has become so generally distributed in the province of Manitoba that it may be regarded as epidemic. The sources of the water supply are largely independent of one another, and a great majority of cases cannot be explained by the direct soakage of surface water containing germs into the wells. There is, however, one factor which does not seem to have received the attention it deserves, and that is the wind. The tendency of bacteria to cling to dust particles is well known, and they may be thus carried to places where the conditions favor their development, such as into open wells, into vessels, containing milk, or butter, or on to the roofs of houses thence to be washed by the next rainfall into the cisterns. There are two practical points to be deducted from this suggestion, first the necessity for very careful disinfection of all typhoid stools and their subsequent disposal

by being burned, or buried deeply in a hole with a liberal quantity of lime or other disinfectant. The second point concerns the water-closets on railway trains. Many people with ambulatory typhoid or other diseases *en route* for home or hospital use these closets, and thus typhoid stools are spread along the track, ready for distribution by the wind all over the neighboring country. It would not be difficult to attach a box below the chute, or adopt some modification of the earth closet, the excreta being removed and burned at divisional points along the line.

CANADA MEDICAL RECORD

October, 1898.

1. A Cases of Suppurative Pylephlebitis with no Apparent Cause. S. H. Martin.
2. A Case of Incontinence of Urine Cured by Anterior and Posterior Colporrhaphy. A. Laphorn Smith.

Practical Relations of State Health Authorities with Railways and Other Public Carriers in the Matter of the Transportation of Corpses. P. H. Bryce, Toronto. *The Railway Surgeon*, Dec. 27th, 1898.

Recent Work Bearing upon the Pathology and Morbid Anatomy of Shock. Wyatt Johnston, Montreal. *The Railway Surgeon*, Jan. 24th, 1899.

A Strange Case of Granuloma of the Face and Extremities. Francis J. Shepherd, Montreal. *Journal of Cutaneous and Genito-Urinary Diseases*. January, 1899.

Reviews and Notices of Books.

TWENTIETH CENTURY PRACTICE—An International Encyclopedia of Modern Medical Science, by Leading Authorities of Europe and America. Edited by Thomas L. Stedman, M.D., New York City. In Twenty Volumes. Vols. X., XI. Diseases of The Nervous System. New York. Wm Wood & Company.

The *tenth* volume of this great work deals with, Diseases of the Brain and Meninges, Hysteria, Epilepsy, the Spasmodic Neuroses, Neurasthenia, and the disorders of Speech and Sleep. Dr. Joseph Collins contributes the articles on Diseases of the Brain, and Membranes: He begins with the morphology and anatomy of the brain, and in a few pages describes clearly and fully the most important points pertaining to our present day knowledge of this intricate subject: We are much pleased to see him hold to the ordinary nomenclature. The habit of certain recent writers in adopting every new fangled term leads to much confusion.

The part dealing with the physiology of the brain is very complete on localization.

The different forms of encephalitis, infantile cerebral palsy and sclerosis together with the bulbar and cerebellar diseases are taken up in order. Dr. Collins' contributions to the volumes extend over 260 pages, and are characterized throughout by a successful effort to make difficult subjects plain.

Dr. Charles L. Dana, of New York, writes on Intracranial haemorrhage, Embolism, Thrombosis (Apoplexy and Hemiplegia). It is hardly necessary to say that this well known writer has done full justice to a group of every day diseases to which he has paid special attention, and our knowledge of which his researches has materially advanced.

Dr. B. Sachs, of New York, is the author of the chapters dealing with Tumors of the Brain; a short but excellent presentation of the subject.

The articles on Hysteria and Epilepsy, by C. S. Féré, of Paris, are both of great value. The article on hysteria is more complete and thorough than anything we know of in the English language on this subject.

Dr. H. T. Pershing, of Denver, writes a very clear and sensible article on the disorders of speech, The Disorders of Sleep are dealt with by Sanger Brown, of Chicago.

The XI. volume opens with an account of the Diseases of the Cerebro Spinal and Sympathetic Nerves, and their treatment by J. Hendrie

Lloyd, of Philadelphia. The diseases and injuries of the individual nerve trunks are taken up in order, and we have also a very good account of the subject of Multiple Neuritis. The Trophoneuroses have been entrusted to C. K. Mills, of Philadelphia. He describes, under this heading, Hemifacial Atrophy and Hypertrophy, Hypertrophy of one-half of the body, Localized Atrophies and Hypertrophies, Hyperostosis of the Cranium, Raynaud's disease, Perforating Ulcer of the foot and Ainhum.

Dr. F. X. Dereum, of Philadelphia, contributes the article on the remaining Tropic disorders including Scleroderma, Acromegaly, and Adiposis Dolorosa. The latter disease having been first described by Dereum, it is appropriate that he should write on it in this important work.

Bruns, of Hanover, and Windscheid, of Leipsic, contributes a series of articles on diseases of the Spinal Cord, among which may be mentioned localized myelitis, syringomyelia, spastic spinal paralysis, amyotrophic lateral sclerosis, and progressive spinal muscular atrophy.

Tabes Dorsalis, by Möbius of Leipsic, in an article of more than usual value among a series of able contributions.

Strumpel, of Erlangen, the author of the well-known text-book of Practice, contributes the articles: "The Combined System Diseases of the Spinal Cord." Under this heading he describes Friedrich's Disease, Hereditary Spastic Spinal Paralysis, and the Combined System Diseases in the Lateral and Posterior columns of the Cord which are due to exogenous causes, especially Syphilis, Poisons, Severe Constitutional Affections, and Pernicious Anaemia.

A thoughtful article on Pain, by Lightner Witmer, of Philadelphia, concludes the 11th volume.

Both volumes are well illustrated.

J. S.

DWELLING HOUSES—Their sanitary construction and arrangement, by W. H. Corfield, M.D., Oxon, F.R.C.P. Lond., London; H. K. Lewis, 1898, pp. 125.

That a fourth edition of this work is called for is sufficient evidence of its merits. It is specially adapted for administering elementary instruction on house sanitation to architects—who, as a rule, sadly need it. The scope is somewhat wider than the title implies, and includes water supply and drainage. The usual cuts of water closets, etc., are not omitted. We notice that several elaborate pictures and explanations of obsolete domestic filters are given—the Bastem and Berkenfeld models being causally mentioned in closing. It is decidedly a book that one would wish to see widely read by architects and builders.

W. E. J.

AN AMERICAN TEXT BOOK OF GYNECOLOGY. Edited by T. M. Baldy, M.D. Second Edition, Revised, Philadelphia. W. B. Saunders, 1898.

This edition is the revised form of a volume which has been very favorably received both in Great Britain and America. The names of the authors are well-known, and are a guarantee of good work.

The book is essentially a practical one, and is especially valuable to the practitioner. There are a large number of illustrations, some of which, unfortunately, are not in keeping with the excellent quality of the text. Thus Figs. 26 and 27 are very indistinct, and are not calculated to be very instructive. Figs. 170 and 171 are apt to mislead the student. They are intended to illustrate the method of introducing a pessary. The cuts might have represented the fundus of the uterus turned to the front. A student might imagine that replacement of the organ is brought about by the introduction of the pessary; whereas, of course, reposition should precede the latter. A full page coloured plate representing the Hottentot apron is scarcely necessary in a teaching manual.

Such defects as these are very apt to creep into a book of such magnitude, and they might be easily remedied in a new edition. The predominating excellencies in the work are too abundant to be mentioned in detail. They amply suffice to recommend the book to many readers.

J. C. W.

THE SEXUAL INSTINCT. Its Use and Dangers as Affecting Heredity and Morals. By James Foster Scott, B.A. (Yale University), M.D., C.M. (Edinburgh University), 800, pp. 436, New York, E. B. Treat & Co., 1899: Price, \$2.00.

A well written book pleading for a higher standard in sexual life for physiological, ethical, and moral reasons. It is a book that all medical men will wish success to, and might be read with great advantage by other than medical men.

It deals with sexual instinct, and the importance of a just appreciation of its influence; the physiology of the sexual life; a proper calculation of the consequences of impurity from the personal standpoint; woman, and the unmanliness of degrading her; some of the influences which incite to sexual immorality; prostitution and the influences that lead a woman into such a life; the regulation of prostitution; criminal abortion; gonorrhea; syphilis; onanism; and the perversions.

Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Stated Meeting, December 5th, 1898.

H. A. LAFLEUR, M.D., VICE-PRESIDENT, IN THE CHAIR.

Drs. A. A. Robertson and Mackenzie Forbes, of Montreal, were elected ordinary members.

Drs. John McIntyre, James Allan, and James Maclean, of the Western Hospital, were elected temporary members.

PATHOLOGICAL SPECIMENS.

Dr. A. G. Nicholls showed the following specimens :—

A Case of Myodegeneratio Cordis with Atheroma of the Coronary Arteries.—This was taken from a female, aged 70, whose main trouble had been shortness of breath. There had been no pain, headache, nor oedema of the body, but she had occasionally suffered from blindness. The cardiac area was increased, and there was a loud blowing systolic murmur at the apex.

The heart weighed 440 grammes. The right side was hypertrophied and dilated; the left ventricle was dilated. Both coronaries showed extensive adhesions. In the anterior vessels beginning 2 c.m. from the origin and extending for a distance of 2.25 c.m., the artery was converted into a calcareous tube, into the lumen of which projected two hard nodules which greatly narrowed the lumen. Microscopically the heart showed diffuse fibrosis. Death occurred suddenly.

A Case of Mitral Stenosis and Aortic Regurgitation Associated with Adherent Pericardium and Corborationum.—The patient was a young man of 24, who had suffered from severe attacks of inflammatory rheumatism. The heart dulness was greatly increased in both directions; the apex in the 6th space, and outside the nipple line. There was a marked presystolic thrill felt at the apex, a presystolic and systolic murmur was heard also at apex. At the aortic cartilage there was a diastolic murmur transmitted down the sternum.

The heart was very large, and the pericardium generally adherent by old adhesions. The mitral orifice was stenosed, being of a funnel shape, with great calcareous deposit. There was evidence of regurgitation through the aortic valves.

Two Cases of Ulcerative Tuberculosis of the Kidneys.—The first was found unexpectedly at an autopsy performed on a female of 35 years.

The left kidney was enlarged; the capsule adherent; the surface coarsely granular. On the surface little groups of abscesses like hemp-seeds were noticeable. At the upper end was a cavity filled with cheesy material, connected with a calyx. At the lower end was a larger caseous abscess and several papillae were seen to be involved in an early process. The ureter was thickened and the mucosa of the upper third showed minute tubercles.

The left kidney was represented by a small fibroid mass with only a small portion of kidney cortex recognizable. It contained firm cheesy material, becoming absorbed. The bladder showed tuberculosis about the orifice of the left ureter, and near the neck of the trigone. The second was a man of 47. He gave a history of untreated gonorrhoea 25 years before, and "grippe" (?) four years before, after which he had noticed a urethral discharge with pain and frequency of micturition.

During the six weeks before admission, all these symptoms were very marked, and he had had chills. The urine was 1020 sp. gr., contained pus and a little blood. No tubercle bacilli were found.

The left kidney had a puckered surface with numerous miliary tubercles fairly generalized, but most numerous in the lower portion.

On section an abscess the size of a hickory-nut was seen at the upper end filled with caseous material. Below this was a second focus, the size of a bean, not communicating with the pelvis. One small focus about the middle was in communication with a calyx. The ureter was dilated; the lumen showing numerous small tubercular foci. A few tubercular nodules were found at the trigone of the bladder. The vesiculæ seminales were caseous, as was also the left epididymis. In the apices of both lungs were fibrous nodules with calcareous spicules, with some recent tuberculosis about them.

There was also miliary tuberculosis of the lungs, liver, right kidney, and spleen, also tubercular enteritis.

Dr. G. E. Armstrong asked, in regard to the first kidney exhibited, of which *Dr. Nicholl's* stated that the tuberculosis of the kidney was apparently secondary to a focus in the lung, if there was any evidence of the way in which the infection passed from the lung to the kidney, whether it was through the blood or the lymphatics. And, also, whether there was any history of traumatism in the case. If so, he thought that this might have some bearing on the case as tending to produce blood stasis in the organ.

Dr. J. M. Elder, referring to the second kidney exhibited, asked if it was common to find a kidney so shrivelled up as this one was, without anything in the organ itself to account for it. Might it not be a congenital condition, a want of development of the kidney?

Dr. Nicholls, in reply to *Dr. Armstrong*, said that it was, perhaps, a little hypothetical to say where the disease started. He had made the

statement that the primary focus was in the lungs because the lesion there was apparently the oldest one in the body. The condition of the kidney itself did not throw much light on the subject, but the fact that the pelvis was not involved would point to the blood rather than to the genito-urinary tract. If coming from below, one would expect to find the pelvis of the kidney diseased. There was no history of traumatism in the case, but a previous history of gonorrhoea, and of possible influenza, the bacillus of which is extremely liable to attack the kidney, and lessen its resisting power.

In reply to Dr. Elder, he did not think that it was possible that the atrophied and fibroid kidney in the other case could be due to a congenital condition. He had seen three cases of this kind, and one in Vienna, was even smaller than the specimen shown.

With regard to the Chairman's remarks, he had seen in the autopsy room on several occasions an adherent pericardium which was not suspected during life. There was no symptom definitely pointing to adherent pericardium except retraction of the chest wall from adhesions between it and the pericardium, and this latter condition was not often present.

MULTIPLE TUMORS OF THE HANDS.

Dr. W. M. Nelson, referring to the case exhibited by Dr. Springle at the last meeting, said that when he had first heard of the case he had thought that it might possibly be multiple fibromyomata, but he had thought worse of it. On looking up the subject he had come upon a very similar case in Hutchison's Archives and by the plate given (shown in meeting), it was seen to closely resemble Dr. Springle's case. Crocker had also reported a case with a coloured plate (shown) which was considered to be of the same nature as Hutchison's.

HAEMORRHOIDS IN CHILDREN, WITH REPORT OF A CASE.

Dr. E. W. Archibald, the author, being unavoidably absent, this paper was read by Dr. A. G. Nicholls. (See page 110.)

Stated Meeting, December 19th, 1898.

H. A. LAFLEUR, M.D., VICE-PRESIDENT, IN THE CHAIR.

Drs. N. C. Smillie, and J. A. Dickson, of Westmount, and Dr. W. H. Smyth, of Montreal, elected Ordinary Members.

TUBAL PREGNANCY.

Dr. A. Laphthorn Smith read the report. (See page 121.)

URINARY INCONTINENCE TREATED BY TIGHTENING THE SPHINCTER VESICAE.

Dr. A. Laphthorn Smith read the following report :—

During the last twenty-four years I have been consulted by a number of women for incontinence of urine following a very severe labor. A few of these were found, on close examination, to have a vesico-uterine or a vesico-vaginal fistula, which were dealt with in the usual way and cured by operation. Nearly all the others were treated for two or three months with a mixture of iron, strychnine, and phosphoric acid in full doses, and were also cured: the cause in their cases being weakness of bruised and overstretched muscular fibre. But about six months ago the present case came under my care at the Montreal Dispensary, and proved an exception to the rule of my experience. Mrs. M., age 40, had a very severe instrumental labor about a year ago, ever since which time she has had to wear large pads to catch her urine. Her physician was unable to stop it in any way. If she remained in bed she could hold water for an hour or two, and then it would trickle out if she moved or took a long breath, and when she went about her work it kept running all the time, keeping her clothes wet, and always smelling of urine. I put her on the above tonic treatment, and in order to observe her better took her into the Samaritan Hospital for a couple of weeks. A careful examination failed to detect any fistula, in fact, in filling her bladder with warm salt solution the latter flowed out, beside the catheter; there seemed to be no life in the sphincter. There was a large rectocele and cystocele and lacerated perineum. Although I have seen a great many patients with this condition and quite commonly causing desire to micturate frequently and also a sensation as though some urine still remained in the bladder, as indeed it does, yet I do not remember to have had a case in which it caused incontinence. I therefore feared that the cure of these conditions alone might not suffice to cure her of her trouble, and I had some intention of, at the same time shortening or taking a reef, so to speak, in the relaxed sphincter. This I found was quite easy to do, when I had removed the vaginal mucous membrane to the extent of two and a half inches in length, and an inch and a half in breadth. In order to tighten up the sphincter I made the denudation further down towards the meatus than usual, and instead of drawing the edges surrounding the denuded area with a purse string suture, as I usually do, I tightened up the sphincter by means of a running catgut suture which was buried in the muscular layer of the bladder right down to the urethra. The vaginal mucous membrane was then accurately brought together over this. Hegars' operation on the posterior vaginal wall was then done, with a buried and a superficial row of catgut. This made a good support for the bladder. Fortunately the catgut was good, and her tissues healthy, so that in both, primary union was obtained. The result was all that could be desired. She could cough and turn in bed from the first day without wetting herself, and at the end of two weeks she could walk about with comfort, and without a single drop of urine passing involuntarily.

FOREIGN BODY IN THE NASO-PHARYNX.

Dr. H. S. Birkett read the report of the case. (To be published later.)

VOICE, FROM A MEDICAL STANDPOINT.

Dr. H. D. Hamilton referred to the accessory parts of the body concerned in voice-production, as the thorax, lungs, etc., and the various resonance-chambers of the nose, the ear and the cranial cavities. Much depends upon these parts being kept in a state of perfect health. To maintain the musical voice in a state of perfection it is necessary for the whole body to be in perfect health. Faulty methods of vocalization and overstrain of the voice are to be avoided.

Dr. Wesley Mills was interested in the voice physiologically, and aesthetically, but the subject had many points of view. He had thought it possible that Dr. Hamilton had meant to suggest that voice might be an indicator of disease, just as the face is. He was still of the opinion that such was the case. Here was a subject for investigation not requiring a very special knowledge of the voice musically considered, but only of the pitch and qualities of sound. When in practice, Dr. Mills had had a large proportion of speakers and singers, a class in which he took a special interest. Regarding the voice in health and disease, volumes might be written. Children are so little guarded against the dangers of over-straining the voice that it may be injured for life during school days. Those who sing should be warned against using the voice during the change of life. It is well known that a voice of a certain quality may be changed after puberty; a tenor after puberty may become a baritone. Then, too, singers in societies strain the parts, producing congestions and exhaustion of the nervous system from attempting a range beyond their power. Excessive use of the voice was seen in country clergymen, who were fond of talking, and often crowded the whole of their speaking into a few hours, in one day. One case where a man had preached for three hours on Sunday, and also conducted the singing, came to his office with a growth on the vocal cords. An improper method of speaking and of breathing with an exhausted thorax, which leads to elevation of venous pressure and exhaustion of the parts, were the two principle reasons in explaining the troubles of clergymen. Another important cause was speaking under worry, and the irregularity of their work. Troubles of the voice were comparatively rare among actors, who are regular in the use of their voice, and understand a few plain principles of common sense, which they employ. In public speaking the speaker is more effective if he ascertains just the amount of effort necessary to reach his hearers. It is quite superfluous to speak of the evil effects of alcohol and tobacco on the voice, but one must remember that in explaining these we must make large allowances for different individuals, and remember that there are different

ways of producing tones. Pitch is altered in two ways, by shortening the vocal cords and by altering their tension. There is the same perfection in the trained singer, that there is in the trained athlete. Some time ago the speaker had made use of a great many students in the laryngoscopic investigation of the voice, and had never failed to get some sort of a record. One result of this investigation was to teach him that rigid views of the physiology of the voice did not hold any more than rigid views on other parts of the economy. It is well to remember that there is different ways of doing the same thing. This is well known to actors and singers, who, in spite of the abuse of alcohol can perform their duties. These are the wonders of nature, who can treat themselves in the wrong way and yet not suffer as others do for it. Two professional singers in this city had spoken to the speaker about the condition of the nose in their pupils. So little attention was paid to this point that in one instance the teacher had been obliged to stop in the middle of the lesson and request his pupil to blow his nose. He had been reminded of this by noticing the fact that in the Leipsig clinic, Professor Barthin invariably taught his young patients how to blow their nose by closing one passage and blowing one at a time. Another point to be taken into consideration in speaking was the condition of the room. A bad atmosphere, or exposure to draughts, was harmful from the action of the vitiated or cold air on the larynx, and the nervous system. When one takes into account the amount of work done in speaking, one does not wonder that the conditions must be the most favorable to get the least fatigue. Often all that is required in treating a case of breakdown is to send the patient away for a perfect rest.

Stated Meeting, January 9th, 1899.

J. G. ADAMI, M.D., PRESIDENT, IN THE CHAIR.

Drs. Elizabeth Mitchell and Maude E. Abbott, of Montreal, and Dr. Arthur Birt, of Westmount, were elected ordinary members.

OSTEOSARCOMA OF THE SKULL.

Dr. J. M. Elder exhibited for Dr. Armstrong, who was absent, a case of osteosarcoma of the skull. (To be published later.)

EPITHELIOMA OF THE UPPER JAW.

Dr. Elder also exhibited a patient on whom Dr. Armstrong had operated for epithelioma of the upper jaw.

HAEMORRHAGIC MENINGITIS.

Dr. Wyatt Johnston showed the specimens of a case of haemorrhagic meningitis.

CANCER OF THE OESOPHAGUS WITH ABSCESS OF THE LUNG.

Dr. F. G. Finley gave a report of this case and *Dr. D. P. Anderson* demonstrated the pathological specimens. (See page 125.)

A CONTRIBUTION TO THE STUDY OF BRIGHT'S DISEASE WITH SPECIAL REFERENCE TO THE ETIOLOGICAL RELATIONSHIP OF THE BAGILLUS COLI.

Dr. A. G. Nicholls read a paper on this subject, which will be published in the March number.

THE LATE DR. W. M. NELSON.

Resolved:—That this Society records with extreme regret the loss which it has sustained in the death of *Dr. W. M. Nelson*, who, although but lately returned to us after a long absence, had, by his zeal, seriousness of purpose, and enthusiasm for his special work—dermatology—impressed all with his great value as a member of this society. He had already made many friends and gave promise of a brilliant future.

Further Resolved:—That a copy of this resolution be sent to the relatives of the late *Dr. Nelson* and to the press.

Stated Meeting, January 23rd, 1899.

H. A. LAFLEUR, M.D., VICE-PRESIDENT, IN THE CHAIR.

Dr. F. W. Gilday, of Montreal, was elected an ordinary member.

DISCUSSION ON TYPHOID.

Dr. James Stewart, and *Dr. Geo. E. Armstrong*, introduced the discussion from the medical and surgical aspect. (See page 81.)

Correspondence.

PRIVATE WARDS IN PUBLIC HOSPITALS A CAUSE OF HOSPITAL ABUSE.

To the Editors of THE MONTREAL MEDICAL JOURNAL.

SIRS,

The contention of the writer of the editorial in your January number, that the existence of private wards in public hospitals is a fruitful source, (in fact the inference is that it is *the most fruitful source*), of hospital abuse is the most extraordinary and illogical argument that I have yet seen advanced in discussions upon this subject. It is all the more surprising, when the fact is borne in mind, that five of the six editors, (who are responsible for this article), are physicians and surgeons in active practice, with large hospital experience, and who are daily treating patients in the private wards of the Montreal General and Royal Victoria Hospitals.

At the present time three classes of patients are treated in the hospitals above mentioned, (1) The *bona fide* poor, who are the class for whom hospitals are primarily maintained, and who are treated free of all, or any, charge. (2) A large class, mainly from outlying districts, who pay fifty cents per day, for hospital service, including medical and surgical treatment, drugs, stimulants and everything which they receive while in hospital, and (3) Private ward patients, who pay \$2.00 to \$2.50 per day for hospital service alone, and pay for their medical and surgical treatment besides. Now, surely, when one considers that the first class, are those who cannot pay their way and are therefore *bona fide* and admittedly objects of charity; and that the patients of the third class do fully pay their way in every respect, while the patients of the second class pay only fifty cents per day, for what costs the hospital, in round figures, about \$1.25 per day, and pay nothing at all for professional services, it is not difficult to see where lies the most likely source of abuse. Moreover, these patients are admitted without any systematic or thorough investigation into their financial positions, and practically on their own statements or those of a physician, clergyman or philanthropist, that "they are too poor to pay for a private ward"—an expression of opinion be it observed, and not a statement of fact. Their ideas on this point are naturally very lax and, they fondly believe, or pretend to believe, that in paying fifty cents per day, they are paying their way and scorn the imputation that they are charity patients. This abuse is now of so long standing, and may I say, so respectable, that philanthropists,

clergymen, and even many physicians lend themselves to it, and recommend patients for admission on these terms who are quite able to pay, and who expect to pay their way in every other sphere of life. Not only is it quite clear to my mind that this is the chief source of hospital abuse, (I do not here refer to hospital out-patient departments), but it is equally clear that by a very little trouble on the part of the hospital boards, lay and professional, acting in co-operation, this abuse can be entirely removed without inflicting any hardship on anyone, and to the great benefit of all concerned. Briefly, the remedy which I have to propose is : A rearrangement of the terms of admission of the patients who are treated in the public wards, so that the present fifty cent per day class shall be abolished and instead, class (2) shall be obliged to pay the cost of maintenance, (say \$1.25 per day), and not necessarily, as heretofore, be exempted from paying for their medical and surgical treatment. Classes (1) and (3) would remain as at present, the hospital receiving such voluntary contributions from the patients of the first class as they are able or willing to give. The burden of proof as to financial condition I would put upon the patients themselves. I would fix a standard of income, whether from salary or otherwise, and in the case of property holders, a standard of assessed or assessable property which would be the dividing line between classes (1) and (2), and (2) and (3), and I would demand from applicants for admission, official certificates from the regular municipal officers of their towns or parishes, and not, as at present, be satisfied with vague general statements which prove nothing and which enable the unscrupulous to defraud the hospitals and the medical profession with the greatest ease. I am perfectly certain that such a plan must commend itself to every one, who looks into the matter, as simple and workable, and that it would meet with the hearty co-operation and support of the medical profession everywhere.

As for public hospitals maintaining a certain number of private wards, I contend that not only is it necessary in the interests of the public, that they should do so, but that the maintenance of such wards by constantly exposing the hospital service to the test of the experience of independent and intelligent people, (private ward patients and their friends), is the greatest possible safeguard against possible abuses to the charity patients. Furthermore it must be borne in mind that the changes which have taken place in the practice of medicine and surgery during the last quarter of a century, have completely revolutionized the relations of the public to the hospitals.

Twenty-five years ago, all except very poor were treated in their homes, their hotels, or their lodging houses. To-day, no physician or surgeon will dispute the fact that many surgical operations and many forms of medical treatment cannot be nearly so efficiently nor so satisfactorily carried out, even in the most comfortable and luxurious homes,

as in a hospital, and that justice, (in the way of treatment), simply cannot be done to the many people living in hotels and lodging houses. Private hospitals can, and do, to a great extent fill these wants, but there still remains the fact that it is obviously almost impossible to have a private hospital so fully equipped or so efficiently manned for general surgical and medical cases as the large modern general hospital is.

Private hospitals for special classes of cases can, of course, be much more easily equipped and manned than those which are required to be prepared, at all times, for all classes of cases. Besides, accidents and emergencies, especially to strangers passing through our cities must always demand of the general hospitals, at least a certain number of private wards, or the alternative will be, the treating, from time to time, of well to do people as charity patients in the charity wards.

Much more might be said in favour of the propositions which I have advanced, but as this letter is already too long I cannot deal with the subject in detail.

JAMES BELL.

Montreal, February 18th, 1899.

BRESLAU AS A MEDICAL CENTRE.

To the Editors of THE MONTREAL MEDICAL JOURNAL.

SIRS,

Breslau, although little visited by Canadians, contains one of the best and most active medical schools in Germany and a few notes by one spending the winter there may not be uninteresting.

The buildings of the medical faculty are new. In fact one or two of them are not yet quite completed. They cover several acres and each department has its own separate building. The greater number are arranged around a pleasantly laid out garden in the form of a large triangle.

One side is taken up principally with the medical building, embracing four large wards and a number of smaller ones, as well as an isolation building a few yards away. The Chief of this department is Prof. Alfred Kast, an old assistant of Erb's, who has collected a very large amount of clinical experience in Hamburg, Erlangen and Breslau. His teaching is thoroughly practical and his methods of diagnosis and treatment are eminently adapted for use in private practice. He presents his cases as far as possible in series. At the beginning of the session he gave a most excellent and practical course on blood diseases.

In a case of pernicious anæmia he was able to demonstrate anky-

lostoma duodenale in the stools. In one of acute leucæmia with hæmorrhages, and also in one of purpura hæmorrhagica he dwelt on the importance of excluding septic causes for all blood conditions accompanied by a tendency to hæmorrhages. In chlorosis he emphasized the necessity of excluding: 1. Phthisis; 2. Gastric ulcer; 3. Excessive loss of blood from any cause, before reaching a diagnosis.

After blood diseases he presented a series of cases of spitting of blood due to cancer of the stomach, injury to the chest, and phthisis with hæmoptosis.

Then he had a very marked case of jaundice due to secondary syphilis in which the skin showed a macular syphilide at the same time as the jaundice. He has himself seen some half dozen cases of jaundice in secondary syphilis, and is inclined to ascribe it to an inflammation of the smaller biliary passages; although an enlarged gland at the hilus and a syphilitic exanthem in the bile ducts have also been mentioned as possible explanations. Lately he has been giving us some interesting nervous cases in which as an old pupil of Erb's he is quite at home.

To day he had up a case of hysteria with intractable hiccough. Last day it was paraplegia due to pressure on the conus terminalis by a spinal curvature.

A few days ago one of his assistants demonstrated the use of the X rays in the diagnosis of hypertrophy of the heart. The heart could be very distinctly seen in all the cases shown. This method is especially useful in emphysema, when the percussion dullness is difficult to mark out.

The next side of the triangle is taken up by the ear and throat clinic and the surgical. The latter is presided over by Mikulicz who seems to be quite a popular idol in Breslau. The asepsis in his clinic is the most complete I have ever seen. The ordinary class in surgery which is in a large theatre, consists of demonstrations of cases for diagnosis and of small operations; also the results of former operations. The first time I visited his clinic he had a case of septic poisoning with localised inflammation in the infra-axillary region. For the treatment of this case he put on rubber gloves and then proceeded to make multiple and deep incisions to an extent that I never saw equalled. He was certainly thorough but as to whether he did more than was necessary or not I am not prepared to say.

On sending in my card I was invited to follow him to the operating room proper, which is quite separate from the theatre and to which only a few students at a time are admitted. In the anteroom I was told to take off my coat and made to don a linen duster. I had also

to put on a pair of rubbers over my boots. All who went near the patient had also to put on linen caps and a contrivance like a respirator over their mouth and nose. Those who took part in the operation after disinfecting their hands, put on white cotton gloves fresh from a sterilizer, which were handed to them by the nurse with a pair of forceps. All instruments and dressings were handed to the operator with forceps by a nurse on a raised platform just within easy reach of him.

The case was one of cancer of the stomach. The preliminary incision and examination of the stomach was made by an assistant, and then Mikulicz himself took the case in hand and would have finished the operation, but found such extensive adhesions to the liver that he decided nothing could be done and left the case for the assistant to close up.

The other buildings forming the triangle are those for skin diseases, women's diseases, psychiatry, pathology, residences of several of the professors, and administrative buildings and chapel.

Neissy, in syphilis and skin diseases, is one of the best teachers here, and is also very agreeable personally. He holds his clinic for students three times a week. Recently he has shown a number of cases of primary syphilis, ordinary and extraordinary. Among the latter was a primary sore on the cervix, a primary sore on a man who had many years ago had a former attack of syphilis, and a primary sore on the lip. Across the street from the surgical clinic is the clinic for children's diseases, where Prof. Czerny gives three excellent lectures a week, and where there is a very good out-door department. They keep a record of the weight of every child they treat, and consider it most important for both diagnosis and prognosis. Czerny is very simple in his treatment. He believes that there are innumerable theories and practices current among teachers of pediatrics which have no scientific foundations, and will have nothing to do with them. Even antiseptics in diarrhoea he has little faith in, and trusts mostly to getting stomach and bowel free from food by putting the child on what is practically boiled water for a day or more.

In nervous diseases, Prof. Carl Wernike gives a clinical lecture lasting a couple of hours once a week. He is very enthusiastic over his cases and is also one of the best teachers. His cases are well chosen and very interesting. Last Saturday, for instance, he had four cases. 1. Infantile cerebral paralysis, in which the attack only came on three weeks ago, so that the characteristic rigidity of the limbs was just beginning to show itself. 2. Musculo-spiral paralysis due to alcoholic neuritis and apparently immediately induced by the man

sleeping on his arm. 3. Tabetic knee joint, and 4. Hysterical hemi-crania and tongue paralysis.

His clinics are given in the surgical theatre as the nervous clinic is some distance away and has no auditorium. Wernike also has a psychiatric clinic twice a week, but I have as yet not been able to attend it.

The eye clinic, under Professor Uhtoff, is also in a distant part of the town, but if one can judge by the ophthalmoscopic courses, the teaching there is of the best. A new building is now being built for this department near the others. Among some of the other buildings which are near but not in the clinical triangle are those for hygiene pharmacology and anatomy. The latter is the newest, and is here thought to be the most complete anatomical institute in Germany. A new physiological building on a grand scale is also in process of construction and will be occupied in the course of next summer.

The present physiological institute is old and, although splendidly stocked with apparatus and well adapted for graduate work has not sufficient room for the undergraduate classes. Prof Carl Hürthle, who has succeeded Heidenhain, is especially well known for his work on the circulation. He is a master of technique and is a most conscientious and painstaking guide to those working with him, and gives them a great deal of personal attention.

As a city, Breslau is a little larger than Montreal. It has no very special natural or architectural beauty, but is well supplied with good opera and theatre, and living is not expensive. Fair board can be had for twenty dollars a month, and college fees do not cost more than forty or fifty dollars for five months with from four to six classes a day.

One needs a fair knowledge of German before one can do much however, as very little English is spoken; but for any one who knows German, and who wishes a five or six months course in anything medical, I can recommend it in the highest terms.

WILLIAM S. MORROW.

Breslau, December 19, 1898.

T H E

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

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No. 2.

The second issue of the MONTREAL MEDICAL JOURNAL in 1899, is under an enlarged Editorial Board. It has always been the aim of the Editors of the MONTREAL MEDICAL JOURNAL to publish a high-class monthly that would be helpful to the general practitioner in his daily rounds of hard work and great responsibilities, and at the same time be a medium through which the best work in original research in the varied fields of medicine, might be briefly indicated. That this high ideal might be more perfectly attained the Editorial Board has been enlarged, and the JOURNAL has been fortunate enough to secure the following men who will at once take an active interest in, and assume control of their respective departments.

William Gardner, M.D., Professor of Gynæcology ; Frank Buller, Professor of Ophthalmology and Otology ; F. G. Finley, M.B., (Lond.), M.D., (McGill), Assistant Professor of Medicine and Associate Professor of Clinical Medicine ; and Henry A. Lafleur, B.A., M.D., Assistant Professor of Medicine and Associate Professor of Clinical Medicine.

These gentlemen are members of the Faculty of medicine in McGill University ; their names are familiar to the graduates of McGill and may be taken as a guarantee that their work in matter and literary style will be of a high order.

Medicine is such an immense subject, and the advance so rapid that no one or two men can hope to put the readers of a journal in possession of the new material that is accumulating almost daily and specialisation in journalistic work is a necessity.

In addition, the services of a number of collaborators have been secured. May we ask our subscribers to second our efforts in this work by sending us original articles, reports of cases in practice, reports of the transactions of local and provincial societies, and items of interest to the profession. May we also ask you to secure for us

as many new subscribers as possible. It is difficult to successfully publish a pure medical journal and we need the co-operation of the profession.

THE TREATMENT OF TYPHOID FEVER.

We draw the attention of our readers to the discussion on the Treatment of Typhoid Fever at a recent meeting of the Montreal Medico-Chirurgical Society, a resume of which appears in the present issue of the *Journal*. The very large attendance, and the evident interest taken, both by the minority who spoke, and the majority who listened, fully justified the choice of a topic on which the last word seems destined never to be said. The surgical questions involved were clearly and forcibly presented, a plea being specially made for early diagnosis of perforation, and prompt surgical interference in such conditions, in view of the more recent favorable statistics bearing on the operative treatment of that formidable complication. While the discussion, which ensued, showed no dissent from the conclusions regarding the necessity of early diagnosis and operation, there was not the same unanimity about the most reliable subjective and objective signs of perforation, the surgeons, probably influenced by their experience with appendicular disease, laying most stress on the occurrence of sudden abdominal pain, while the physicians were inclined to attach more weight to the associated constitutional disturbance, and particularly the signs of collapse. Certainly the surgeon is quite right in asking that whenever perforation is even suspected he should have the opportunity of consulting with the physician in charge. Too often, he claims, he is called upon to operate when general peritonitis has set in, and the outlook is the worst possible. At the same time one must admit that it is a most delicate point to decide when it is advisable to resort to the knife, and when to stay one's hand, for it can hardly be denied that an exploratory operation is not to be lightly undertaken in the case of a subject already exhausted by a serious disease. The discussion of the medical treatment of typhoid fever evoked, as was to be expected, a wide divergence of opinion, notwithstanding the very convincing arguments and statistics brought forward by the opener of the discussion in favor of systematic hydrotherapy. It is to be regretted that some ardent advocate of the so-called antiseptic and eliminative treatment was not present to urge the claims of this, the most recent, and in some quarters, highly popular, method. As it was, the ancient expectant plan was the only one that found supporters among those who, for one reason or another, condemned the bath treatment, as either barbarous or unnecessary. Really it is too late in the day to advocate a return to methods, which, even under the most favorable conditions, resulted in a mortality ranging from eleven to seventeen per cent. It would be

useless, as well as out of place, once more to recapitulate the advantages of the bath treatment of typhoid fever. We can only point out that the great majority of hospital physicians who have had an extensive experience in the treatment of typhoid fever is unquestionably in favor of this method. It is equally certain that outside of hospital practice very few physicians see a sufficient number of cases of typhoid fever to enable them to judge of the relative merits of this or any other treatment of the disease. No one will deny that the bath treatment has certain advantages, and is open to certain objections, but these are infinitesimal when compared with "The greatest good to the greatest number," achieved. Moreover, it is not claimed that the bath treatment is the final expression of the physician's control over the disease, but that, in the present state of our knowledge, and in the absence of a truly specific treatment, it is the best we know of, working more constantly and more thoroughly for the patient's welfare in supporting the circulation, and the nervous system, assisting elimination of toxins, and relieving or preventing the occurrence of many of the more distressing and even dangerous symptoms in the course of the disease; and, last, but not least, lowering the mortality from this disease to a surprisingly uniform level, wherever the treatment has been introduced.

Obituary

W. M. NELSON, M.D.

We regret to have to chronicle the death of Dr. W. M. Nelson, a graduate of McGill, in 1884. After spending several years in New York, in the study of dermatology, he settled in Montreal, where he devoted himself to his specialty. Several interesting contributions have appeared in this journal from his pen, and he always took an active interest in the Medico-Chirurgical Society; particularly in the discussion of dermatological subjects. Although laboring for years under the disadvantages of grave cardiac disease, and fully realizing the nature of his complaint, he continued at his post, and carried on his duties with unflagging zeal till within a day or two of his death.

Many of his old classmates and confreres will retain a kindly memory of Dr. Nelson, and admiration for his enthusiasm, and for the heroism which enabled him to lead a useful life in spite of unusual physical disabilities.

PROFESSOR KANTHACK.

It may well be that to many medical men in Canada, the name of Kanthack was, until his sudden and premature death, almost unknown, and that it has been a surprise to them to find the leading medical journals on both sides of the Atlantic giving fuller and more appreciative references to him than they gave to one, who, known universally as a great physician, died almost at the same time, full of years and full of honours.

To those, however, who have known Kanthack, and have followed his course, this is no surprise. Sir Edward Jenner had years ago fulfilled his career, Kanthack was but entering upon its fruitful stage, and there is something pathetic in a life of promise abruptly brought to a close. Jenner, although in his younger manhood, the teacher and helper, had for long fought the hard fight to obtain pre-eminence as the fashionable consultant, a position, which, however, influential, is, somehow, rarely sympathetic; on the other hand, Kanthack had devoted himself wholly to medical science for science sake; he had not sought popularity, and his very devotion to work was the indirect cause of his death. Just as there are artists little appreciated by the general public, who are the idols of their fellow artists, so, to a very large extent, was Kanthack the idol, or more truly the ideal, of his fellow workers in pathology. Those who came under his influence, whether as his teachers, his colleagues, or his pupils, saw in him one so single-minded in the pur-

suit of his work, so enthusiastic, so determined to realize rather than imagine the truth, that with his early death it is felt that there is left a gap that cannot soon be filled.

I do not think that Kanthack, had he lived, would have made a name among the great discoverers in medicine, if I may so express it. Discovery of new facts was not his aim, although his friends well know that he was the first to cultivate the actinomycoses hominis, and that Kitasato, but employed a simple method devised by him to gain readily pure cultures of tubercle bacilli from the sputum; matters in which he never claimed a rightful priority, in an age when any serious worker at the new subject of bacteriology is sure to make discoveries, if he so desires. Discoveries as such did not appeal to him, what he constantly sought was to make sure of his facts. He was content, nay anxious, to establish the ground work for others to build upon, and was impatient of nothing so much as of conclusions reached from premises not rigorously sound. I must acknowledged, that rare and valuable as is such habit of mind, it at times, I used to think, rendered him a little illiberal towards men who, gifted with the scientific inquisitiveness, were performing good work in propounding and testing theories, men who from their very gift were apt to express rapidly their conclusions, without indicating or appearing to weigh adequately the data from which their conclusions were deduced. But this very caution in arriving at conclusions, together with his untiring devotion to work, made Kanthack the ideal teacher. He taught those under him to investigate minutely, and imbued them with the true scientific spirit of careful analysis and balancing of facts and observations.

When the remarkable galaxy of talented British physicians and surgeons of this century is called to mind, and when we remember the brilliant advances that have been made by them in medical science, it is remarkable how, with scarce an exception, the best results have been obtained by independent workers, who in their turn had not passed on the mantle to any pupil. With the possible exception of the teachers at Edinburgh and at University College, London, during the third quarter of the century, there has been no live, well characterized school of medicine with the highest scientific traditions well sustained. No one in Great Britain has established a school of pathologists comparable, for example, to the Johns Hopkins School under Professor Welch, or to the school of physiologists created at Cambridge by Michael Foster. Roy founded such a school at Cambridge, but disease arrested his efforts after a few brilliant years. Horsley at University College, promised to accomplish much, and attracted men from afar, until surgical practice and medical politics forced him to resign his professorship. Coats, of Glasgow, has died just as admirable new laboratories have been provided for him. At Liverpool with the Yates Thompson laboratories recently opened by

Lord Lister and Virchow, Boyce may accomplish much. Delepine, in Manchester, appears to be drifting from pathology to public health, and in so doing is performing an excellent public service. Sims Woodhead, just appointed to succeed Kanthack, who accomplished a brilliant beginning for the Laboratory of the Royal College of Physicians at Edinburgh, found the environment at the conjoint laboratories on the Embankment in London, such that it was impossible to found a school. All looked to Kanthack to establish at Cambridge, the great English school of scientific medicine. Everything was in his favour, training, capacity, depth of knowledge, while added to this the old English university afforded pupils, well trained and well prepared, to devote the necessary time for research bringing no immediate remuneration. Apart from personal grounds, it is the fact that the establishment of such a school may be delayed, which renders his death so lamentable. On personal grounds, those who came in contact with him felt the loss of one possessed of a master mind, who, at the same time, was so modest that he did not realize his remarkable influence.

The facts of Kanthack's life are relatively simple, although he passed so swiftly from one post to another that in reviewing the life, one is apt to fall into chronological confusion. Born in Brazil, he spent his school life in Hamburg; his medical education was largely earned in Liverpool and at St. Bartholemew's Hospital. In 1888 he obtained the F.R.C.S. and the M.B., B.S., of the University of London, gaining the gold medal in obstetrics, the London University gold medals being among the highest prizes of the British medical student's career, for they are gained against competitors from all parts of the Empire. 1889 was spent in Berlin under Virchow, and the main paper results from this work, a study of the pathology of the larynx, attracted wide notice. In 1890, in the midst of further researches, he was called back to St. Bartholemew's to be assistant under the late Matthews Duncan, the celebrated obstetrician. That same year he gave up the post, being appointed a member of the British Leprosy Commission and travelling in various parts of India. Of that commission he was the most active member, and the larger portion of the report was compiled by him. It shows well his extreme caution in weighing evidence. Returning, in 1891, he was appointed John Lucas Walker Student in Pathology at Cambridge, and there (with Hardy) he made sundry remarkable studies upon leucocytes and their properties, and again upon snake poison. Within little less than a year he was appointed Medical Tutor and Demonstrator in Bacteriology at Liverpool and hardly was he established there than St. Bartholemew's appointed him head of its pathological department.

In a very short time he made his influence felt profoundly through the hospital. His courses upon pathology and bacteriology attracted wide attention, and his small laboratory became filled with workers. What

is more, he established clinical pathology upon such a basis as had never been known or attempted in London. He worked unremittingly and in 1896, added to his labors by assuming, in addition, the duties of Deputy Professor at Cambridge, during Roy's illness. In 1897, upon Roy's death, he was elected to the full chair of pathology which he thus occupied but a little more than two years.

Of Canadians who have come under his influence may be mentioned Professor Westbrook, of Minneapolis, with whom he published a report upon immunity against cholera, and Professor Connell, of Kingston, who at the Montreal meeting of the British Medical Association, read for himself and Kanthack a valuable communication upon the morphology and flagella of the tetanus bacillus.

As noted in the Philadelphia Medical Journal, the article which will best indicate to the ordinary medical man Kanthack's peculiar power, is his essay upon the General Pathology of Infection, in the first volume of Clifford Allbutt's system.

J. G. ADAMI.

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A CONTRIBUTION TO THE STUDY OF BRIGHT'S DISEASE
WITH SPECIAL REFERENCE TO THE ETIOLOGICAL
RELATIONSHIP OF THE BACILLUS COLI.

BY

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There is scarcely any subject in the realm of medical pathology which has been more carefully and persistently studied than Nephritis. Yet there is no disease, unless it be cirrhosis of the liver, which is more obscure.

From Bright onward, careful observers like Rokitansky, Ziegler, Weigert, Klebs, Ewald, Grainger-Stewart, and Wagner, have investigated the subject. Valuable experimental studies have been made by Grawitz and Israel, Ponfick, Aufrecht, Litten, Roberts, V. Kahlden, Pernice and Scagliosi, which have materially increased our knowledge. But while the histological features of the disease are well known, and have been accurately described, and the clinical features of the various stages are in a general way understood, the ultimate nature of the process is still a mystery.

With regard to acute nephritis, upon which there have been multitudinous studies of late years, we have probably attained something like the truth—the whole series of “infections” and mineral or other toxins being the etiological factors concerned in the vast majority if not in all the cases. The origin, however, of the chronic forms and their relationship or otherwise to the acute stage, may be said to be largely unknown.

The clinical symptoms, the character of the urine, give us merely the roughest sort of information, and every pathologist knows how difficult it is to predict the actual condition of the kidneys from the clinical ex-

amination in any given case. Indeed the confusion of the whole subject may be inferred from the numerous attempts at a rational classification of the various forms of kidney inflammation, which have been proposed, all of which differ more or less in important particulars.

This, I am inclined to think, is the result of too limited a view, and the failure to realize the different factors in the problem. To have any degree of comprehension of the disease, clinical studies, histological examinations, bacteriology, and experimental work, must be laid under contribution.

Acute inflammation of the kidneys is now said to be the result of the following conditions:—

1. Intoxication, e.g., from bacterial toxins, alcohol, lead, cantharides, phosphorus, chlorate of potash, salicylic acid, etc.

2. Complication of :—(a), The acute infections, as, scarlatina, small-pox, pneumonia, acute rheumatism, erysipelas, endocarditis, typhoid, diphtheria, septicæmia, cholera, epidemic cerebro-spinal meningitis, gastro-intestinal disorders, etc. (b), Chronic diseases and cachexias:—arterial sclerosis, diabetes, syphilis, pulmonary phthisis, carcinoma, etc.

3. So-called “idiopathic” cases.

In prosecuting the study of such a subject it is well to remember that the kidney is not the sole field of observation, but that the participation of the blood, the vessels, and other organs, in the process should be taken into account. We should too, I think, separate from true “nephritis” or inflammation of the kidney, that whole group of cases classed under the first division which are really “degenerations” of the kidney epithelium, and are not properly inflammations at all.

There is abundant evidence to prove that the toxic substances above mentioned do bring about degenerations of the nature of cloudy swelling, fatty degeneration, or even necrosis, in the epithelium of the secreting tubules.

Moreover, it has been established by experimental studies, notably those of Wandervelde (*Act. d. pois sur les cell. épithél. n. canalicules contournées*, Brux., 1894), that toxins such as those of cholera, cholera nostras, tuberculosis, diphtheria, pneumonia, influenza, and chemicals, such as chromic acid, lead, phosphorus, mercuric chloride, when injected into animals exert through the blood-stream a harmful influence upon the secreting epithelium bringing about changes identical with those found in the human subject.

Still it must be emphasised that such changes do not constitute nephritis, and since inflammation in the organism is so rarely dissociated from bacterial invasion, it may well be doubted whether when inflammation does supervene, it is not of the nature of a direct infection.

In the case of true acute nephritis, the trend of the investigation of the past 15 years points strongly to the unity of the process as a result of various microbic infections. The varieties of these are numerous.

Bouchard, (*Des néphritis infectieuses*, *Rév. de Méd.* 1. '81), in nine cases of typhoid with nephritis that came to autopsy, found the specific bacillus in every one and in several other living cases found the germ so long as the albuminuria persisted. But since this investigation was six years before the full studies of Gaffky on the bacillus, there may be some little doubt as to the value of the results.

Letzerich, (*Untersuch. u. Beobacht. ueber Nephritis bacillosa interstitialis primaria*, *Zeitschr. f. klin. Med.* Bd. 13, '87, S. 33.) described an epidemic of acute interstitial nephritis with the ordinary clinical symptoms which was due to a bacillus resembling the *B. tuberculosis*, but shorter. Injected into animals it produced nephritis.

Mannaberg (*Zeitschr. f. klin. Med.* '90), in fourteen cases of acute Bright's in acute endocarditis, found streptococci in the urine which he was unable to find in the urine of other cases after a prolonged investigation.

That acute nephritis could be epidemic apart from any relationship with scarlatina, was shown by Fiessinger (*Ga. Méd. de Paris*, Oct. 10, '01). Acute nephritis has also been known to follow infected wounds of the skin, impetiginoid eczema, pemphigus, vaccination, acute tonsillitis and various lesions of the alimentary tract. Among the bacteria which have been recently shown to produce acute nephritis, are the *B. Typhi*, the diplococcus lanceolatus, meningococcus intracellularis, *B. Friedlanderi*, streptococcus pyogenes, staphylococcus albus and aureus, and the *B. Coli*.

The condition is to be regarded as an attempt on the part of the kidneys to eliminate the toxins and micro-organisms of the various diseases. That the kidneys do excrete bacteria even in the absence of gross lesions of the organs is amply proved. Weichselbaum (*Wiener med. Woch.* No. 41, 1885), in a case of ulcerative endocarditis found streptococci and staphylococci in the urine; the *B. Typhi* is found in the urine in quite a large percentage of cases, and numerous other germs have been found in various diseases.

The best statistics on Bright's disease are those of Agnes Bluhm (*Ueber die Aetiologie der Nephritis*, *D. Arch. f. klin. Med.* Bd. 47, '90.) Of 140 cases of acute Bright's disease, 70 per cent. could be traced to acute infections. Only 2.85 per cent. were directly traceable to cold. One of the cases followed acute ileus.

The acute nephritis of the infections is of various types. At one time, degenerative processes in the secreting epithelium predominate, such as extreme cloudy swelling, fatty degeneration, desquamation, and imperfect nuclear staining. At another, the brunt of the toxin falls upon the glomeruli bringing about effusion into the Bowman's Capsules, congestion of the glomerular capillaries and shedding of the capsular epithelium; or occasionally small-celled infiltration into and about the Bowman's capsules. Or at still another, an acute interstitial infiltration of

leucocytes with œdema of the boundary layer (the "lymphomatous" nephritis of Wagner). Lastly, all three may be combined. The first form is most common, but the type seems to depend upon the nature of the infection. The tendency of scarlatina for instance, to cause a glomerulonephritis or an acute interstitial inflammation is well known.

Occasionally the primary infectious diseases are ushered in by an acute nephritis, which may predominate the clinical picture, as in the so-called "renal typhus." Generally, however, the cases occur late on in the course of a specific infection, and are to be regarded as complications due to the effort at elimination. They are probably exaggerations of the common conditions of cloudy swelling, between which and true inflammation, no hard and fast line can be drawn. Again, some of these cases may be the result of a mixed infection.

Further, all grades of severity exist, from a mild inflammation up to a true local suppurative condition. The infection may be in some cases an 'ascending' one from the bladder, but more commonly a 'descending' one from the blood-stream. Only on the latter supposition can we explain the nephritides which occur in skin affections, anginas, and intestinal disorders.

It should not be forgotten that an acute attack may be grafted upon a chronic nephritis which was unsuspected, thus simulating a primary attack. ("Acute recurring nephritis" of Wagner.)

The idiopathic cases are those which occur in previously healthy persons; often the only causes that can be assigned are chilling of the body, or excessive exercise in the cold. This form is especially apt to occur in alcoholics. That there is some relation between the skin and the kidney seems clear.

The etiology of these and the forms occurring in chronic disease will be discussed later.

When we come to consider the production of chronic nephritis the task becomes more difficult. It is usual to teach that the acute cases may become chronic, and that the cirrhotic kidney is an end-stage of the chronic parenchymatous nephritis, or is due to arterial disease, or again, to certain poison, as alcohol, gout, and lead. (The "primäre Schrumpfnieren" of the Vienna School.) This does not, however, explain all the cases; cases of contracted kidney occur where there was no history of any acute attack, and run an insidious course. And again, cirrhotic kidneys may occur in children, where there could be no question of arterio-sclerosis or chronic intoxications from mineral substances.

Further, the cirrhotic kidney has been known to result from infective diseases, as pneumonia (diplococcus), and influenza. The etiological elements in this form then seem to be very various, and the course apparently without any fixed rule.

While it is generally admitted that acute nephritis is in the immense majority of cases, due to some infective agent, as yet, I believe, no one

has ventured to say that chronic Bright's disease is due to the direct action of bacteria.

Holst, indeed, is inclined to support the view that microbes by their toxins are able to produce nephritis without being present in the kidney *per se*, and that the action may appear late or after the primary infection has disappeared, thus producing the chronic disease. But this view does not seem consistent with the facts. Recent investigations, almost without exception, go to show that in acute nephritis microbes are present in the kidney. In the case of pneumonic nephritis, Massalong and Klebs frequently found the diplococcus lanceolatus in the kidney. Michelle, too, (Morgagni, Aug. 1896), in 19 cases found the pneumococcus in 18. In six cases of acute nephritis, and acute nephritis grafted upon chronic in pneumonia, I have found the diplococcus in every one.

Councilman (Trans. Assoc. Amer. Phys. Vol. xiii., 1898.), records the following results:—

42 cases of acute interstitial nephritis were examined bacteriologically post mortem.

In 24 diphtheritic cases the kidney was sterile in six.

In 11, the *B. Coli* was found.

In 5 the streptococcus pyogenes was found.

In 1 the streptococcus aureus was found.

In 8 the diphtheria bacillus was found.

In 1 the *B. Foetidus* was found.

In 5 cases of scarlatinal nephritis.

In 3 the streptococcus.

In 2 the *B. Coli*.

In 1 the staphylococcus.

In 8 of mixed infection of diphtheria with scarlatina or measles.

2 cultures were sterile.

3 the streptococcus.

3 the *B. Coli*.

In other six cases:—

3 the *B. Coli*.

2 the staphylococcus aureus.

4 the streptococcus.

1 the pneumococcus.

1 sterile.

He does not regard the presence of the colon bacillus found under such conditions as of much etiological value. He obtained the same results in the kidneys in the same diseases, in which no interstitial nephritis was present.

Thus he concludes that no weight could be laid on the presence of

bacteria in the kidneys as a causative factor in the acute interstitial lesions.

This conclusion does not seem to me to be warranted for it is amply proved that in these specific diseases germs are to be found in the urine where no gross lesion of the kidneys exists, at least clinically, and the production or not of nephritis depends on the correlation of several factors, outside of the mere presence of bacteria.

With a view of gaining further information and ascertaining whether bacteria were present or not in the various forms of Bright's disease, I have availed myself of the pathological material of the Royal Victoria Hospital from about 325 autopsies and also the clinical notes of all the cases of nephritis in the Wards for the past four years.

In approaching this investigation, I have thought that more valuable information would be attained by examining sections of kidneys which presented evidence of nephritis microscopically, in addition to those which were taken from cases which were recognised clinically. For by this means one gets a wider view of the subject, inasmuch as the study embraces all grades of the disease from the incipient forms up to the most advanced stages. Particularly valuable is the study of the early stages since it is only thus that a true appreciation of the process can be formed.

Sections were made from 105 kidneys presenting the various forms of nephritis. All cases in which there was cystitis or any evidence of an "ascending" infection, or local tuberculosis, were excluded as unnecessarily complicating the subject.

Some of the material of the early years was hardened in Müller's fluid, so that many kidneys presented evidence of post mortem growth of bacteria, these were excluded in drawing conclusions. The material, however, which was hardened in Formol-Müller was satisfactory. All cases in which there was clearly a terminal infection as shown by plugs of bacteria in the capillaries were also excluded.

The method of staining was as follows:—

Celloidin sections, cut as thin as possible, were placed in carbolthionin for from 12 to 24 hours in the incubator. The formula of the stain was:—

Solution of carbolic acid, (1—40) 100 cc.

Thionin,..... 1 gramme.

Filtered as used.

The sections were then decolorised in weak acetic acid, dehydrated in aniline oil, washed in xylol and mounted in balsam.

Those sections in which pus cocci, or micro-organisms positive to Gram, were suspected, were also prepared by the Gram-Weigert method. The results were very satisfactory. Carbol-thionin is certainly the best

stain for bacteria in tissues that I have employed. The sections were examined by 1-18th Reichert oil-immersion lens and No. 4 eye piece.

The classification that I have adopted of the various forms of the disease, is purely a histological one based mainly upon my own investigations, but is practically that of the German School. The division is as follows, it being premised that is somewhat arbitrary, the various forms passing imperceptibly one into the other, the predominant feature being taken as the guide.

1. *Acute Parenchymatous Nephritis*, in which there was degeneration of the epithelium of the secreting tubules as evidenced by cloudy swelling, desquamation of cells, exudate, and imperfect staining of the nuclei, often with casts. It includes hæmorrhagic cases.

2. *Acute Interstitial*, in which there was an acute leucocytic infiltration about the glomeruli or in the lining cells of the Bowman's capsules between the tubules, without grave degenerative changes in the tubular epithelium,

3. *Acute Diffuse*, where the first two forms were combined.

4. *Acute Glomerulitis*, evidenced by congestion of the glomerular capillaries, desquamation of the lining cells of the Bowman's capsules with effusion and exudation into the capsules.

5. *Chronic Parenchymatous*, in which there were marked degenerative changes in the secreting cells, but with a tendency to connective tissue proliferation; hæmorrhagic cases included.

6. *Chronic Diffuse*, where the fibrous hyperplasia had progressed still further, bringing about atrophy and dilatation of the tubules with sometimes hyaline degeneration of glomeruli with periglomerular fibrosis.

7. *Chronic Glomerulitis*, a sub-variety in which the glomeruli showed predominantly, degeneration, atrophy and periglomerular fibrosis.

8. *Chronic Interstitial*, the terminal stage of the chronic diffuse, where the secreting cells were extensively atrophied with cystic dilatation of the tubules, sclerosis of the glomeruli and extreme fibrous proliferation.

9. *Arterio-Sclerotic and Senile*, where the process was most marked in certain vascular districts.

10. *Amyloid Fatty Kidney*, a combination of amyloid disease and parenchymatous degeneration.

11. *Amyloid Contracted Kidney*, amyloid disease in a cirrhotic kidney.

This classification is intended merely to afford a convenient division for the purpose of the present study.

In all, 105 specimens were examined and classified as follows, 28 being excluded for the reasons mentioned :—

Acute parenchymatous	26	Chronic glomerulitis	1
Acute interstitial	3	Chronic interstitial	10
Acute diffuse	4	Arterio-sclerotic and senile	13
Acute glomerulitis	0	Amyloid fatty kidney	2
Chronic parenchymatous	8	Amyloid contracted kidney	0
Chronic diffuse	11		

The results were very striking. Analysis of the different classes gave the following:—

DISEASE.	No. of Cases.	Bacteria Found.	Negative.
Acute Parenchymatous:			
Typhoid.....	5	B. Typhi 2, B. Coli (?) 2.....	1
Ulcerative Phthisis.....	5	Diplococci and Bacilli 2.....	3
B. Aërogenes Capsul.....	2	B. Aërogenes 2.....	0
Diabetes.....	1	Diplococci with halo; very small, 1....	0
Lobar Pneumonia.....	2	“ Lanceolatus 2.....	0
Mitral Stenosis.....	1	“ with halo, 1.....	0
Diphtheria.....	1	B. Löffleri and Cocci 1.....	0
Pyemia.....	1	Staphylococci, 1.....	0
Eclampsia.....	1	Long B. with rounded ends, B. Coli (?) 1	0
Puerperal Septicæmia.....	1	Staphylococci and B. 1.....	0
Epid. Cerebro-Spinal Meningitis.....	1	Diplo. Intracellularis, 1..... (Weichselbaum)	0
Acute Interstitial:			
Lobar Pneumonia.....	1	Small Diplo. (?) Diplo. Lanceolatus;....	0
Pyemia.....	1	Cocci and Bacilli.....	0
Puerperal Septicæmia.....	1	Cult. gave Streptococci.....	0
Acute Diffuse:			
Cancer with septic peri- tonitis.....	1	Diplo. in cultures. 1.....	0
Typhoid.....	2	B. Typhi in areas of infiltration, ...	0
Lobar Pneumonia.....	1	Diplo. Lanceolatus 1.....	0

Of the 32 acute forms of various kinds, bacteria, generally the specific germs of the disease, were found in 28. The overwhelming proportion of positive results leads me strongly to the conclusion that in the vast majority of cases, if not in all, acute nephritis is due to the presence of specific microbes. That there were four negative results does not invalidate the conclusion, for the infection being embolic it is very probable that in such kidneys there are sporadic areas of inflammation surrounded by comparatively healthy tissues. Indeed, this sporadic form is recognized by several of the recent French observers, and is quite analogous to embolic suppurative nephritis.

It is suggestive that minute diplococci with halos were found in one case of pancreatic diabetes, and in one of mitral stenosis with passive congestion of the intestines, while in an eclamptic patient, bacilli were found strongly resembling the B. Coli. The significance of this will be seen later.

In the eight examples of chronic parenchymatous nephritis, four showed minute diplococci with a delicate halo mostly between the lobules in the cortical area. Of these one case, which was associated with *Atrophic Cirrhosis* of the liver, showed a few well marked minute diplococci with a halo. In two, one an alcoholic kidney, bacilli of doubtful nature were seen. Two others gave negative results.

The chronic glomerulitis case showed a slight acute interstitial in-

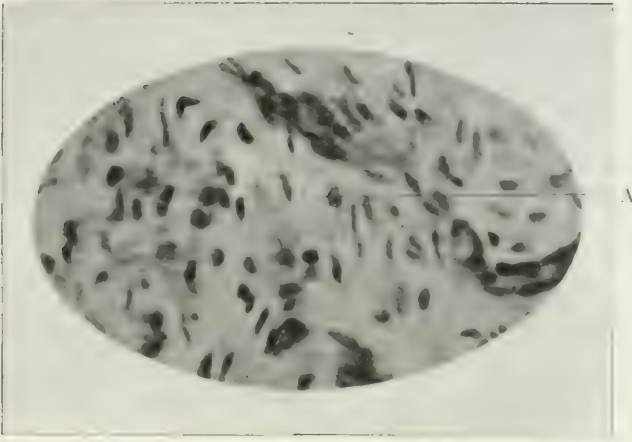


PLATE I. FIG. I.

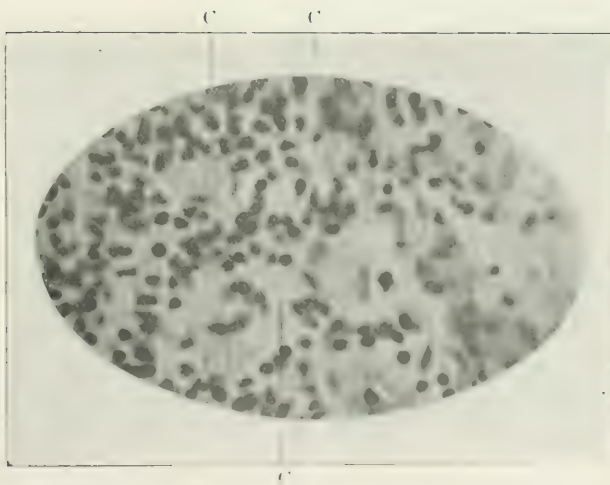


PLATE I. FIG. II.



PLATE II. FIG. I.

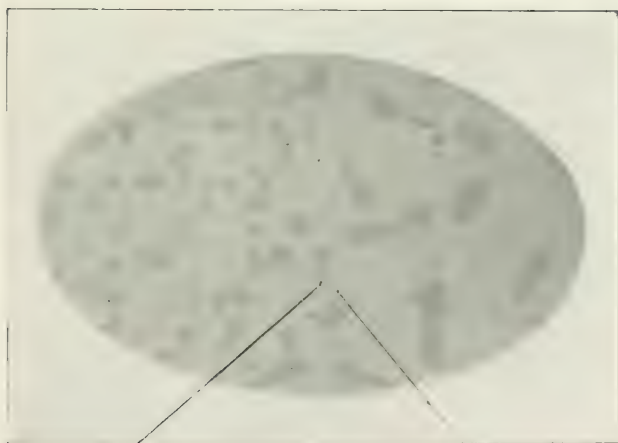


PLATE II. FIG. II.



PLATE III. FIG. I.

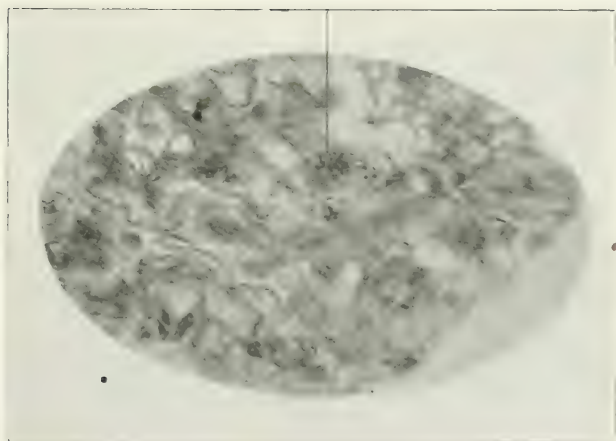
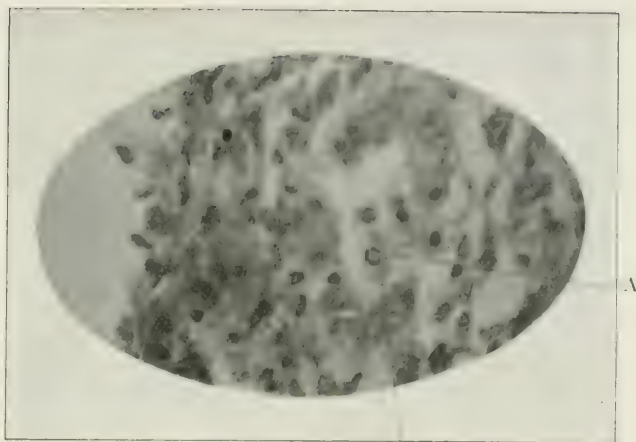


PLATE III. FIG. II.



A
PLATE IV. FIG. I.

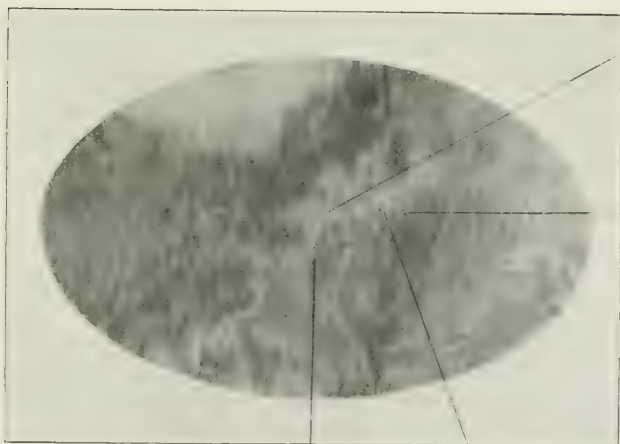


PLATE IV. FIG. II.

flammation as well, and a few rare diplococci were seen. The primary disease was septic peritonitis.

The amyloid fatty kidneys showed no germs.

Still more interesting and suggestive were the results found in the chronic diffuse, chronic interstitial, and the arterio-sclerotic type of the disease.

In the chronic diffuse nephritis, bacteria were found in all 11 cases. In two there were rather large diplococci, which might be the *diplococcus lanceolatus* as a lobar pneumonia was present. In five, small diplococci; in four short stumpy bacilli were seen with polar staining closely resembling the *B. Coli*. These were situated in the areas of round celled infiltration, beneath the basement membranes of the tubules, and in one case within the lining cells of the secreting tubules.

One case, in which the small diplococcus form was seen, was associated with atrophic cirrhosis of the liver.

There were 10 cases of chronic interstitial nephritis. In all were found the minute diplococci with a halo, mainly in the areas of round-celled infiltration, some few within the Bowman's capsules, and in one case within the cells of the tubular epithelium.

Figs. I. and II., Plate 1, show very well the diplococci in the small celled infiltration. In the 13 arterio-sclerotic and senile forms, three gave negative results, but the specimens were very poor; nine showed small diplococci with a halo, chiefly in the areas of round-celled infiltration, and also in one case in a glomerular capillary, in another, within a Bowman's capsule, and in a third with the lumen of a secreting tubule.

In two of the cases besides there were noted bacilli of varying forms. These were diplo-bacilli of small size, very short bacilli with rounded ends, a slender form with polar staining and others, large and curved conforming well to the usual appearance of the *B. Coli*.

To sum up, in the 45 cases of chronic nephritis of all forms, minute diplococci, as a rule with a distinct halo, were seen in 29, and bacilli having the ordinary appearance of *B. Coli* in 4 more. In only six were no bacteria seen, but this might easily be due to poor sections or errors in technique, for it is difficult in a large series of sections to get perfectly even results.

These diplococcus forms were very minute and might easily be overlooked with an ordinary 1-12th immersion. Sometimes it could be made out that they were really very short, fine bacilli with polar staining the intervening substances being almost colourless. They were generally in the areas of interstitial round-celled infiltration. Rarely I have seen them within the Bowman's capsules, and within the secreting cells of the constricted tubules: on one occasion within a lumen. The halo was probably not a true capsule, but due to the effects of refraction.

As to the nature of these diplococcus forms, it may be said that they are identical in appearance and size with the diplococci which Adami has found recently in the liver, associated with progressive portal cirrhosis, and which he has proved to be a variant of the colon bacillus. His very important investigations appeared in the MONTREAL MEDICAL JOURNAL in July, 1898, the British Medical Journal for October, 1898, and the Lancet of August 13th, 1898. He found diplococcus forms in all livers which stained a brownish hue and were probably dead forms, while in atrophic cirrhosis of the liver they were increased in number and stained well. He has, I think, established the fact that these forms are really a modified colon bacillus, and that the liver in health, is constantly excreting them, thus constituting a chief barrier of defence against bacterial infection from the gastro-intestinal tract. In experimental animals he found that in 15 minutes after intravenous inoculation with a pure growth of the *B. Coli*, the endothelium of the capillaries had enclosed the germs, and in two hours the bacteria were to be found within the parenchymatous cells of the liver. The germs which were of the ordinary colon type presented also diplococcus form. The diplococcus isolated from cirrhotic livers formed very minute colonies on nutrient agar and produced relatively little gas, but in other respects conformed well to the colon type.

With a view to discover if the colon bacillus is to be found in the urine of nephritis cases, I have examined the urine in one case of acute hæmorrhagic nephritis, and in one of chronic interstitial. The method employed was to sterilise the meatus and glans penis then to allow the patient to pass several ounces of urine and collect the residue in sterilised flasks. These were then sealed and placed in the incubator for 48 hours. In the first case I obtained the colon bacillus, but it died out rapidly, and I was not able to study it very closely.

In the second case, the chronic interstitial, various forms were found as seen in Fig. I., Plate II. These were stout bacilli, either straight or curved with rounded ends, some with polar staining; they all resembled the ordinary colon forms. Besides these there were small ovate bacteria, and shorter more delicate bacilli with polar staining. There were also short chains composed of very short bacilli with rather blunt ends showing polar staining. All were negative to Gram. A broth transfer was made and after 48 hours all the usual forms of the *B. Coli* were seen with the addition of minute diplococci with a halo. These, owing to the crescentic form of the stained portions resembled gonococci. Small diplococci with halos were seen exactly resembling those seen in the sections, also a similar diplococcus, but larger.

When transferred to agar for 48 hours, a thick tallowy growth was produced, and microscopically the germs were short oval bacteria, very small, with the 1-12th oil immersion exactly like cocci; also numerous

minute diplococcus forms. No bacilli were seen. (Vide Fig. II., Plate II.) This was transferred to a Bouillon made from kidney reacting, 1.5 per cent acid to phenolphthalein : this showed minute diplococci with halos, diplobacilli, a slender bacillus with polar staining and besides these, the ordinary typical colon. (Fig. I., Plate III.)

Cultures from the coccus and diplococcus forms were made on broth, milk, potato, glucose, agar and litmus agar. They showed that in all respects the organism reacted like the *B. Coli*, with the exception that indol was not produced. Unlike Dr. Adami's diplococcus, this one produced a very heavy growth on agar.

When grown with sterilised bile on agar, the cocci and diplococci seen, were even smaller than those produced on plain agar.

With regard to the presence of *B. Coli* or other germs in the urine of chronic nephritis, information is lacking, and my investigations on this point are still going on, being hampered at present for want of enough clinical material. Still, in the cases I have examined I have found the colon bacillus, although as is well known, it is also present in other conditions, notably cystitis, nephrolithiasis and pyelonephritis suppurative. *Fernet* (Bull. et Mém. de la Soc. des Hôp. Paris, Dec. '92), in a case of acute interstitial nephritis occurring two months after an abortion, found the *B. Coli* in great numbers in the urine.

Several observations have been made on normal urine to discover if it usually contains germs. The best studies are those of *Enriquez*, (*Recherches bact. sur l'urine normale*, Sém. Méd., No. 57, 1891, p. 468,) This author collected the urine in the way which I have employed, and concluded that normal urine was aseptic.

In the urine of 11 healthy people, and five cadavers, the cultures in 10 were sterile, in five staphylococci, and in one, non-pathogenic bacilli were found. These last cases, however, were taken from tuberculous wards, and in two there was a history of previous infection. The urine of seven healthy rabbits was sterile. In the post mortem records I have studied, as a rule, there is no note of cultures taken from the kidneys or urine.

In three cases of tuberculosis of the intestine, the *B. Coli* was found in the kidney once and in the urine once : one case sterile. In two cases of typhoid fever, *B. Coli* in one ; one sterile.

One case of tubercular pyelonephritis gave *B. Coli*.

One case of nephrolithiasis gave *B. Coli*.

One case of chronic mixed nephritis with amyloid disease gave the colon bacillus.

The presence of the colon bacillus so generally in the kidneys, which I have studied, receives additional importance from the fact that in this study I have been careful to exclude all cases in which there were cystitis, suppurative pyelonephritis, and tubercular abscesses—conditions

in which there is apt to be an 'ascending' infection with the colon bacillus. We must then conclude that the infection is a 'descending' one by way of the blood stream. That the presence of the colon bacillus is to be explained as a terminal infection or a post mortem overgrowth, I do not believe, for it is easy to eliminate cases of this kind as I did very freely, for the differences are quite distinctive. In ante-mortem terminal infections, the germs are largely in the capillaries, often forming large plugs, and consist of large fat bacilli, short bacilli, or sometimes diplococci, but always much larger and staining more deeply than the diplococcus forms I describe. Further, there is no evidence of inflammatory reaction about these large bacteria, while in the case of the diplococcus, they are enclosed by an inflammatory round-celled infiltration. Neither is it a post-mortem growth, for in this case, the germs are in the superficial cortical layers, and are always much larger and different in appearance and staining powers. Such germs can be seen with an ordinary No. 7 objective, while the diplococcus requires the 1-12th oil immersion at least, or better the 1-18th. Then again, the diplococci are always very few in number, perhaps only five or six in a section.

It is almost impossible to get perfectly normal kidneys in the post mortem room, but I have examined a few for diplococci in which microscopically the tissue showed no abnormality. In 10 such sections, 7 showed no germs; three showed rare diplococci similar to those in the nephritis cases, but on further examination I found that in one case there had been a hernia operation, and there was an acute local enteritis; in the second there had been a gastrotomy performed, and there was local peritonitis; and in the third a spina bifida had been removed. Thus in two there could have been infection from the intestinal tract.

That the process in chronic nephritis with productive inflammation is due to an embolic infection, is strongly supported by the histological features in the sections I have studied. The lesions in the chronic forms are identical with those in the acute interstitial as to their anatomical distribution.

In the great majority of the acute interstitial and acute mixed varieties, the areas of round-celled infiltration are to be found around the glomeruli or around the afferent vessels, and interlobular arterioles exactly as would be expected in an embolic infection. The same holds good for the chronic cases. In the arterio-sclerotic type, that the infiltration and proliferation is mostly confined to vascular districts needs only to be mentioned. In the early stages of the chronic diffuse nephritis one sees the inflammatory exudation in the same way about the afferent blood vessels, associated with connective tissue hyperplasia. The cells of the Bowman's capsules proliferate causing atrophy and hyaline degeneration of the glomerular tuft, or we get small fibrous patches about the vessels between the contorted tubules.

In both acute and chronic forms the vessels of the affected areas often show marked congestion. Later on, in the chronic interstitial type (contracted kidney), the fibrous tissue overgrowth is so generalized that this relationship to the blood vessels can no longer be made out. In my series, the process could be accurately followed out.

What is the starting point then of this colon bacillus invasion? The most obvious is the intestine. We have ample evidence that intestinal disorders can cause acute nephritis. It occurs in gastro-enteritis and in Cholera Asiatica, for instance.

Ebstein, (*Deut. Med. Woch.*, June 15th, 1897), discusses acute nephritis as a complication of chronic gastro-enteritis. In a case he records in a woman of 27, there was a history of diarrhoea for nine months previously, pain in the epigastrium and anorexia, for six. The nephritis came on most acutely, and was fatal in a few days from eclampsia, coma and collapse. At the autopsy acute nephritis was found, a tapeworm in the intestine, acute follicular ulcerative enteritis and enlargement of the mesenteric glands. The spleen was normal. Influenza and all other infections as a cause were excluded and Ebstein concluded that the condition was due to an intoxication from the intestine.

Dupeu, (*Acute Nephritis in Children*.—*Journ. de Méd.*, July 10, '97), states that acute nephritis may be a result of ordinary gastro-intestinal intoxication, particularly when there is dilatation of the stomach. It has been observed in children as young as 11—16 months fed by the bottle, and in whom vomiting and diarrhoea were prominent symptoms. In these cases it may last 2—4 weeks and present all the usual features of Bright's Disease.

With a view to determine the relationship, if any, of various gastro-intestinal disorders to nephritis, I have examined carefully the clinical records of the Royal Victoria Hospital for the past four years, having access to these through the courtesy of Prof. Jas. Stewart. In making the estimate I have been careful not to accept as an etiological factor the nausea, vomiting, and diarrhoea, which so often usher in or complicate an uræmic attack, but I have endeavored to find out if there was any history of such disorders existing for lengthened periods which might reasonably be regarded as of etiological moment.

There were 71 cases of nephritis of various forms divided according to the reports as follows:—

Acute Parenchymatous Nephritis.. . . .	10
Sub-acute Parenchymatous.. . . .	15
Chronic Parenchymatous.. . . .	17
Chronic Interstitial.. . . .	29

The etiological factors were:—

Chronic Alcoholism	15 times
Dyspepsia, (Gastro-enteritis, nausea, Vomiting, etc)	15 times

Infectious Diseases, (Influenza, Acute Rheumatism, Diphtheria, Typhoid).....	11 times
Exposures to wet and cold or to extremes of temperature	5 times
Appendicitis.. . . .	Once
Puerperal Eclampsia.. . . .	Twice
Gastralgia	Once
Acute Gonorrhœa	Once
Chronic Gonorrhœa.. . . .	Once
Insidious, (No definite cause).. . . .	22 times

Thus it will be seen that of the 71 cases studied, 29 were subsequent to gastro-enteric disturbances, assuming as one fairly may that such would be present in the chronic alcoholics. This is a percentage of 40.84 per cent. of all cases. Excluding the acute cases due to the various infective fevers in which the etiology is quite established, the proportion becomes 50 per cent. In 30.98 per cent., the onset was insidious, and no cause could be assigned.

These facts go far to show that there is a definite relationship between nephritis and disorders of the alimentary tract, for when we consider that there were in the records no special investigations made to establish such relationship, but merely the ordinary routine investigation, the above figures become invested with even greater importance. Further, there were very few of these gastro-intestinal disorders acute in character, but in most there was a history of such symptoms extending over periods of months or years.

It will be interesting to examine the cases divided according to their clinical types in relation to previous lesions of the gastro-intestinal tract.

In the 10 cases of acute parenchymatous nephritis, no cause could be assigned, in 3, there was a history of :

Acute Tonsillitis (Rheumatic) in.. . . .	1
Extremes of Temperature, etc., in.. . . .	1
Acute Rheumatism, in.. . . .	1
Acute Infections, in.. . . .	3
Gastro-Intestinal Disturbances, in....	1

In the 15 sub-acute parenchymatous nephritis, the causes were:—

Acute Gonorrhœa, in.. . . .	1
Exposure to wet and cold, in.. . . .	2
Alcoholism (1 case with hernia)	3
Mild Dyspeptic Symptoms, in.. . . .	2
Insidious Onset, in	4
Unknown, in.. . . .	1
Puerperal, in.....	1
Catarrhal Appendicitis (?), in.. . . .	1

As would be anticipated, the acute infections are the most common causative factors in the acute and sub-acute forms, but in 7 out of the 25, some gastro-intestinal disturbance existed previously.

The etiological factors in the 17 chronic parenchymatous nephritis were :—

Infective Diseases, as Measles, Diphtheria, Mumps,	
Scarlatina, etc	2
Chronic Alcoholism	5
Wet and Cold	1
Gastro-intestinal Disturbances, (Diarrhœa, Dys-	
pepsia, etc.	5
Unknown	4
In the chronic interstitial types, 29 in all :—	
Wet and cold	1
Alcoholism	7
Gastro-Intestinal Disturbances, etc.	6
Infections, (Influenza, Typhoid, Diphtheria,	
Chronic Gonorrhœa, ! each)	4
Insidious	5
Unknown	6

Clinical evidence then strongly supports the view that Chronic Bright's Disease, and indeed Acute, may be a result of some long-standing gastro-intestinal disorder, 50 per cent. of cases giving this history. thirty per cent. of cases are insidious in onset, all the usual causes being absent: such might be called "Cryptogenetic forms." Can these be due to an infection from the intestine? It is very probable, but the clinician must further elucidate this point by a more careful study of the history. I certainly have found the diplococcus form of the colon bacillus in several diseased kidneys, where no cause could be assigned for the chronic nephritis, also in the kidneys in one case of cancer of the pancreas, and in one of passive congestion of the intestines.

That albuminuria occurs as a complication of acute gastro-enteritis, chronic diarrhœa, dysentery, and the like, is well known. In 21 such cases taken at random from the records, I have found albuminuria in five. Whether this fact is of much significance or not remains to be proved, although certain recent observers insist that all albuminurias are pathological.

But to afford a point of entrance for the *B. Coli*, a lesion of the intestinal tract is not all. There must be an increase in virulence of the bacillus, and this is the usual condition.

Maccaigne, (*Arch. Gén. de Méd.*, Dec., 1896.) has published some important experimental observations. He has found that *B. Coli* derived from the healthy intestine is harmless in the abdominal cavity, but it

becomes virulent if there is some disorder of the intestinal tract as diarrhœa, constipation, strangulation, etc. He could produce nephritis in animals by intravenous inoculation with *B. Coli* but usually obtained a suppurative form.

Klecki produced artificially, compression of a loop of intestine in the dog, and found that the virulence of the bacillus taken from this part was greater than that of the germ taken from an uninjured portion.

Sanarelli, (*Ann. de l'inst. Pasteur*, 1894, pp. 193 and 353), found in guineapigs suffering from typhoid fever, that the virulence of the colon bacillus in the intestine was greatly increased.

Anything then which causes a loss of the lining epithelium of the intestine with increased virulence of the germ, provides the starting point for a systemic infection. That this often happens is beyond doubt. The occurrence of pneumonias due to colon infection is well recognized in strangulated hernia, and in septic peritonitis due to the same germ, the bacillus coli has been found in all the organs of the body including the kidneys.

The usual line of infection is through the mesenteric glands and liver, which thus constitute the first barrier of defence, either through the portal blood or by the bile ducts or both ; further, it may take place through the abdominal lymphatics. Prof. Adami, in his work referred to, has shown that the liver normally contains the colon bacillus, but apparently in a dead state, and this agrees very well with what we have found in post mortems, where we very frequently fail to get germs from the liver. His investigations show that the cells of the liver take up the germs and excrete them in the bile thus rendering them inert.

This view, however, is in seeming opposition to that of *Roger*, (*Sém. Méd.*, Oct. 19, 1898) who hold the view that the liver is powerless against the colon bacillus, and even assists its growth. His observations, however, were made on experimental animals, with virulent cultures so that the case is not the same as that with which we are dealing. Should the condition mentioned exist so that we get a relatively virulent germ introduced into the liver, then we get local results on the liver leading to parenchymatous degeneration, perhaps cirrhosis, and even to invasion of the systemic circulation. This invasion of the blood stream would, a priori, be more likely to take place the more severe the lesion from which the liver was suffering.

To determine whether there is any connection between hepatic disorders, as for instance, cirrhosis of the liver, and the various forms of nephritis, I have consulted the post mortem records of the General Hospital from 1883 to 1898, to which I have had access through the courtesy of Dr. Wyatt Johnston. In addition I have made use of the Royal Victoria records from 1895 to 1898. In the aggregate there were 1547 autopsies.

Atrophic cirrhosis of the liver, or atrophic cirrhosis with fatty infiltration, occurred 24 times. Associated with these :—

Acute Parenchymatous Nephritis was found.. . .	Twice
Chronic Parenchymatous Nephritis..	Twice
Chronic Diffuse Nephritis..	Once
Chronic Interstitial Nephritis..	15 times
No special abnormality to gross appearance.. . . .	4 times

This was a total percentage of 83.30, or Chronic Nephritis only in 75 per cent. Conversely, the proportion of chronic interstitial nephritis in all diseases other than cirrhosis of the liver, was 242 cases or 15.64 per cent.

In three cases of hypertrophic cirrhosis, acute parenchymatous nephritis was present in one; chronic interstitial in one, and no change in one. These figures speak for themselves.

Further it has been mentioned by several observers that fibrosis of the pancreas often goes with cirrhosis of the liver, facts pointing to a common cause. In the five Royal Victoria Hospital cases, this condition was present in every case. Of course the same infection that would attack the one would be likely to affect the other, the excreting ducts opening so close together. I have also frequently observed that there is a similar relationship between the kidneys and the pancreas in a large proportion of cases.

But while in the case of the liver and pancreas, the infection could be through the ducts, in the case of the kidneys, of course, it must be through the circulatory system. Moreover, it needs only to be mentioned that the toxins which are supposed to bring about nephritis act in a similar way upon the liver. This is seen in the case of chronic alcoholism, and it is far from uncommon to find in the infective diseases such as tuberculosis and typhoid, at one and the same time, an acute infiltration in the portal sheaths and in the interstitial substance of the kidney.

The disease must then be regarded as an attempt on the part of the kidneys to eliminate the bacteria which reach them. Much information on this point may be gathered from experimental work.

As early as 1874, Franke and Gscheidlen, and in 1879, Watson-Cheyne, were investigating the fate of bacteria injected into experimental animals. Their investigations together with those of Cohnheim, proved conclusively that such bacteria were excreted by the urine.

Wysokowitsch, (*Zeitschr. f. Hygiene u. Infectiouskr.*, Bd. 1, '86), after a long series of experiments with various germs concluded that bacteria were only excreted by the kidney when there was some local lesion of the organ, in other words, that a physiological excretion does not exist.

Schweizer, (*Virch. Arch.* Bd. CX., 1887), on the other hand was of

the opinion that bacteria could pass the kidney epithelium in the absence of any lesions which it was possible to recognize by the ordinary methods.

The majority seem to think that some degeneration of the secreting parenchyma, be it never so slight, is necessary to permit the passage of germs into the urine. Such primary lesions would be afforded by the condition of congestion and cloudy swelling which is such a constant accompaniment of the acute infection.

Pernice and Scagliosi, (Beitrag. zu. Aetiologie der Nephritis. Arch. f. path. Anat., cxxxviii, 3.), injected various pathogenic and non-pathogenic bacteria beneath the skin such as, anthrax, *B. pyocyaneus*, staphylococcus, and *B. prodigiosus*. In the kidney they produced hyperæmic endarteritis, and hæmorrhage into Bowman's capsules.

These lesions lead to the passing of the bacteria into the tubules and hence into the urine. The presence of the germs in the tubules caused swelling, fatty and hyaline degeneration of the epithelium, later, exudation and casts. The contorted tubules were chiefly affected, but also the straight tubules. Later there was desquamation of cells, collapse of the tubules and hyperplasia of the connective tissue. These authors got the same results with filtered products of growth.

Through the kindness of Professor Adami, I have studied the kidneys in the case of the rabbits inoculated intravenously with pure growths of *B. Coli*, which he employed in his studies on cirrhosis of the liver. These animals were inoculated in the auricular vein, and then killed at regular intervals.

Rabbit A., killed 15 minutes after intravenous inoculation with pure growth of typical *B. Coli*.

Microscopically, there were relatively few bacilli found, which were confined to the vessels of the cortical region and the neighborhood of the glomeruli. They appeared as fair-sized bacilli.

Rabbit B., killed 30 minutes after.

The bacteria were found in great numbers in the capsule and as large embolic masses in the arteriæ rectæ of the pyramidal portion. The glomerular tufts contained relatively few. Many could be seen in the perivascular lymph-spaces between the contorted tubules and between the collecting tubules in the medulla. These had the typical appearance. Bacteria could be seen in the endothelial cells of the capillaries, within the secreting cells of the cortical tubules, and in the lumina. When enclosed in cells they were, as a rule, smaller, often appearing as slender bacilli with polar staining, and sometimes as a diplococcus form with a distinct halo. In the cells they stained badly, and seemed to be in a state of absorption. Fig. II., Plate IV.

Rabbit C., killed one hour after.

Bacilli were much fewer in number, being mainly confined to the interlobular and straight vessels, but also being seen as shadows in the parenchymatous cells of the convoluted tubules.

Rabbit, D., killed four hours after.

The bacteria were seen largely in the interstitial substances between the convoluted tubules; many were within the excreting cells showing as faint diplococci or short bacilli with polar staining. Some were also seen beneath the basement membranes of the tubules, and with the lumina.

The glomerular capillaries contained very few. The diplococcus form was noted to be much smaller than the usual colon type. Cultures from the urine were sterile.

Rabbit E., killed 24 hours after.

Marked parenchymatous degeneration of the secreting cells; very few bacteria could be seen, mostly in shadows beneath the basement membrane of the contorted tubules.

These simple facts are in accordance with the observations of Chiari, Adami and others. After the intravenous inoculation of an animal, bacteria are found in all organs, principally the liver, kidneys, spleen and bone-marrow, but after a short time, chiefly in the liver. It is important to note that the endothelial cells of the capillaries and the secreting cells of the convoluted tubules in the kidney, have the power of ingesting bacteria, rendering them for a time, at least, inert. The same thing has been shown by Adami in the liver, when within 15 minutes after inoculation, he observed bacteria within the endothelium, and in two hours within the liver cells themselves. I have seen the same ingestion of germs by the secreting cells of the contorted tubules of the kidney in the case of acute nephritis in lobar pneumonia, and in septicaemia. (Fig. 1, Plate IV.) The tendency of the bacillus to assume a diplococcus form is noteworthy.

Thus the liver and kidney parenchyma are shown to play an important part in the resistance of the organism against bacterial invasion. This resisting power on the part of the parenchyma, however may be diminished in many ways, particularly by chemical and bacterial toxins, thus permitting the more rapid passage of germs through the organs.

Cavazzani, (Ueber die Absonderung der Bakterien durch die Nieren. (tbl. f. allg. Path. u. path. Anat., iv. ii., 1893). found that after the injection into an animal of toxic substances such as cantharides or pyrogallie acid, the kidneys permitted the passage of bacteria through their substance much more quickly than in the case of animals which were not so treated.

That the kidneys are a most important factor in the elimination of germs from the body is beyond question; they may do this when least

suspected. Enriquez found streptococci in the urine, of a person whom he thought healthy. On more careful examination, however, a minute abscess was found on one finger ; this gave a pure growth of streptococci.

Whether a normal kidney will allow germs to pass through it is a moot point. Orth thinks that it may do so, when no gross lesion can be made out.

Neumann and Konjajeff, on the other hand assume that there must be a local kidney lesion. However, this may be, certainly the kidney does permit the passage of bacteria where one cannot find a lesion more severe than cloudy swelling.

It is certain, however, that for a time at least, the kidney cells are able to attack the bacteria, apparently digesting them, and rendering them inert. Later, when the vitality of the excreting cells is sufficiently lowered, living germs are to be found in the urine.

This view is in accord with that of Sherrington, (*Journal of Pathology and Bacteriology*, Feb., 1893), who found that the escape of bacteria tended to occur in the late stages of a communicated disease, and not immediately upon the introduction of them into the circulation. This means that only after the tubular epithelium has been depressed by soluble toxins, do the cells become pervious to the germs. He, however, concludes that his experiments do not support the suggestion of Cohnheim, that the body protects itself against bacterial action by the excretion of living germs through the kidney and liver.

In the light of the present study we get an entirely new conception of the process at work in the case of Bright's Disease. All cases, acute and chronic, are brought into the category of 'infections.' The nature of the infecting germ varies; in the acute forms it is usually the specific germ causing the primary disease, although in some cases it is the colon bacillus. In the chronic cases, in the great majority, it is the colon which is the infective agent, but there is some evidence to favor the view that a few germs like the bacillus Pfeifferi and the diplococcus lanceolatus are capable of producing fibrosis. Two processes are at work, parenchymatous degeneration and productive inflammation. Parenchymatous degeneration alone is not to be regarded as a true nephritis, but is the result of chemical and bacterial toxins, bringing about injury to the secreting epithelium. Whether inflammatory infiltration occurs in addition or not depends on several factors.

1st, the number and size of the infecting germs.

2nd, the degree of virulence.

3rd, their specific qualities.

If the germs are few in number and of small size, they may pass through the glomerular capillaries, and merely produce degeneration and necrosis without further change. If they be sufficiently numerous to

block the vessels or get into the capillary endothelium, then we get local inflammatory reaction with acute leucocytic infiltration.

A germ of low virulence brings about a low grade of infiltration, but if of high virulence, and in sufficient numbers, extreme degeneration is brought about, and interstitial abscess formation. The inherent quality of the germ is of importance. Thus some germs nearly always bring about suppurative inflammation, while others are more apt to bring about a reparative fibrous hyperplasia. This has been shown recently by Von Wunscheim, in a study of pyelonephritis. When the infection was due to streptococci or staphylococci, suppuration resulted, but when it was due to the *B. Coli*, he saw distinct evidences of connective tissue production. However, these differences probably have something to do with the virulence and abundance of the bacteria concerned.

In the chronic cases where fibrous hyperplasia is beginning to make its appearance, just as in the leucocytic infiltration of the acute cases, we see the fibrous change beginning about the afferent and interlobular vessels associated with vascular dilatation, followed later by compression and degeneration of the glomeruli, atrophy of the tubules, and the formation of casts. Interstitial proliferation then is the key-note of the process. This proliferation is the more readily brought about since there is present a germ which tends to produce fibrous hyperplasia; present too, in very small numbers in an infective process probably extending over years. And further, the progressive nature of the lesion is due to continuous action of a germ which has been shown to be present in all stages. I consequently cannot believe as Holst does, that a toxin can go on acting so as to bring about a fibrous hyperplasia, long after the original infection has disappeared. That an infective agent, like the *B. Coli*, for instance, can be shown to be the corpus delicti, in all the stages of Bright's, explains the anatomical distribution of the lesions, the pathological process, and the etiological momenta, in a way that none of the usual theories have been able to do. We must, I think, assume that before the germs can act there must be a lowering of the vitality of the epithelium through toxins or otherwise.

To explain the nephritis that occurs in a chronic disease in the case of the constitutional diseases, diabetes, tuberculosis, etc., we have mostly a degenerative process from toxic influences, or a mixed infection. In carcinoma we must look for secondary infection or an intestinal lesion.

The idiopathic or 'cryptogenetic' cases, are most likely to be of the nature of infections from the alimentary tract, a mere congestion of this tract being sufficient.

To sum up, my conclusions are as follows:—

1. The different forms of Bright's Disease are to be regarded as

various stages in the same general process, there being a unity prevading the whole pathological picture.

II. All forms of nephritis are due in the immense majority of cases to infective agents ; the acute, to the usual specific germs of the primary disease, and the chronic, as a general rule, to the bacillus coli, though other germs may, sometimes, be concerned.

III. Acute interstitial inflammation and subsequent connective tissue hyperplasia are the key-note of the process; this is, however, preceded by parenchymatous degeneration.

IV. The point of invasion by the B. Coli is the gastro-intestinal tract; for other germs it may be various.

V. The liver and mesenteric glands are the first barriers of defence ; and the endothelial cells of the capillaries and secreting tubules of the kidney have the power of ingesting bacteria, this being an attempt at inhibition and elimination.

PLATE I. FIG. I.

Reichert oil-immersion $\frac{1}{8}$ th. Without eyepiece.

Kidney. Area of round-celled infiltration showing minute diplococci at A. and B.

Patient, a male, aged 27 ; clinically a chronic nephritis of one year's standing ; there was a history of repeated exposure to wet and cold. The kidneys were of the large white variety passing into the contracted stage ; microscopically a chronic diffuse nephritis.

PLATE I. FIG. II.

Reichert $\frac{1}{8}$ th.

Kidney. Area of round-celled infiltration showing a diplococcus at C. Patient, a female, aged 21 ; clinically a chronic nephritis of 8 months standing ; onset insidious.

Kidneys were extremely contracted ; microscopically extreme interstitial nephritis.

PLATE II. FIG. I.

Reichert, $\frac{1}{8}$ th.

Original growth of B. Coli from the urine of a patient with advanced chronic interstitial nephritis.

Shows colon bacilli of the ordinary type, bacilli with polar staining, cocci and diplococci ; also chains of minute bacilli with polar staining. Taken from a flask in which the urine had been allowed to stand for 3 days at 37°C.

PLATE II. FIG. II.

Reichert $\frac{1}{8}$ th.

The same organism as last transferred to 1.5 per cent. acid agar for 48 hours.

Now single cocci and diplococci.

PLATE III. FIG. I.

Reichert $\frac{1}{8}$ th.

Same as last on kidney bouillon 1.5 per cent. acid. Ordinary colon forms and minute diplococci.

Note.—The diplococci in the sections and in the slides from the cultures when viewed by transmitted electric light were seen to be really minute short bacilli with polar staining.

PLATE III. FIG. II.

Reichert $\frac{1}{8}$ th.

Acute parenchymatous nephritis in acute lobar pneumonia.

Figure shows part of a glomerulus with numerous diplococci of pneumonia in a capillary.

PLATE IV. FIG. I.

Reichert $\frac{1}{8}$ th.

Acute parenchymatous nephritis in acute lobar pneumonia.

Diplococci of pneumonia in the lumen of a contorted tubule. Under the microscope, however, the diplococci could be seen as shadows within the secreting cells.

PLATE IV. FIG. II.

Reichert $\frac{1}{8}$ th.

Kidney showing secreting tubules from an experimental rabbit half an hour after inoculation with pure growth of B. Coli.

The bacilli are seen as diplococcus-like forms within the secreting cell shown at A.

NOTE.—For the above photographs I am greatly indebted to Dr. David Patrick who has admirably succeeded in a difficult task.

THE DISCRETIONARY POWERS OF A SURGEON.*

BY

A. G. BROOKE CLAXTON,
Of the Montreal Bar.

Mr. Chairman, Ladies and Gentlemen :—

If I understand your profession aright, one of your chief duties is to fulfil the noble ideal which King Arthur set to his Knights of the Round Table.

“To ride abroad redressing human wrongs.”

And in so doing, you are often placed in perilous situations, situations in which you have to make up your minds, what you must do, in a moment of time.

This evening I have the pleasure of addressing you on the recent case of Parnell vs Springle, and in treating of it, propose to say a few words regarding the discretionary powers of the surgeon.

By the declaration of her action plaintiff (Parnell) amongst other matters recited, that in February 1898, as she was suffering from some affection of the womb, she called on defendant for treatment, that after an examination, and a few weeks treatment, defendant (Dr Springle), advised that an operation on the womb was necessary, and that, that operation would be a very slight one, producing but a very slight wound which would be soon healed. In short she represented that what Dr Springle primarily proposed doing was a mere bagatelle.

Her declaration went on to say, that she consented to undergo this slight operation at the Montreal Western Hospital as it was more convenient for defendant to perform it there, and that, whilst under the influence of an anæsthetic, defendant, assisted by another surgeon, instead of performing the operation for which she had given her consent, did an entirely different one, cutting open the abdomen and removing the ovaries.

She claimed \$1,999.00 damages, and set out amongst other reasons for asking that sum, (1) the fact that she had given no consent to the removal of her ovaries; (2) the fact that by this operation she had been deprived of her capacity to conceive, and bear children, and was thereby rendered unfit for marital life ; (3) the fact that by having been deprived of her means of becoming a mother, she had lost her hopes of uniting herself in the holy bonds of matrimony, and of finding in some good steady-going husband, the support and comforts, that usually attend the happy married life ; (4) that in law, defendant had no right to deprive her of a part of her body without first asking her consent, and

* Read before the Montreal Medico-Chirurgical Society, Feby. 20, 1898.

(5), lastly she alleged, that damages were also due her because defendant had circulated the details of this operation amongst plaintiff (Parnell's), numerous friends and acquaintances.

I may at once say that she did not prove one word of this last slander.

To this action, we replied, denying particularly every allegation of her declaration, claiming that Dr Springle was not responsible, as it was the hospital staff and not Dr Springle that performed the operation, and we then declared to the Court, the full details of what really did take place, which, I think I had better give you at length.

We specially pleaded, that it was true, that Miss Parnell came to Dr Springle to be treated; that he found her so sore to the touch, that it was only possible to approximately discover, what was the actual condition of affairs, and that after treating her for a couple of weeks, he advised that she should be operated on for ventro-fixation, and advised her to take a private ward in the Western Hospital where it would be more convenient for him to operate.

Plaintiff then saw some of her friends, and later on reported to defendant that she was willing to have the operation performed, but, that she had no money to pay the doctor or to meet the expense of a private ward in the Hospital.

Dr Springle then undertook to obtain a quiet bed in the public ward of the Western, where she would receive the best of care and attention, gratis, free of all charge.

Some days later plaintiff went into the public ward and was subsequently operated on by the staff of the hospital.

Amongst others of the staff there was present at the operation besides Dr Springle, Doctors Perrigo and Tatley and House Surgeons Irvine, McIntyre and Ford.

As Dr Perrigo had had greater experience in operations of this kind, defendant requested him to perform the operation and he did so, the others assisting.

You will recollect that the plaintiff had been told that, the operation to be performed was that of ventro-fixation, and that Dr Springle had expressed to her his hope that it would not be necessary to remove the ovaries.

Dr Perrigo made the necessary incision, and on his passing his fingers behind the uterus, to raise it into position, pus welled up, and, he at once ascertained that the tubes and ovaries on both sides had been formed into abscesses, a condition which I understand is technically called a double pyosalpingitis with bi-lateral tubo-ovarian abscesses.

The testimony which we brought out at the trial, was to the effect that it was one of the worst cases of this kind, that had come under

Dr. Perrigo's notice, and if my memory holds me good, I think, he has done this operation some 400 times.

On Dr Perrigo stating to the others what the condition was, a consultation was held, and it was decided that, if they allowed plaintiff to remain in the state that she was then in, an inflammatory condition of the abdomen would be set up, which would bring on general peritonitis, to be followed, most probably by death, and that under the circumstances, it was their duty in order to save the patient's life to remove the tubes and ovaries.

After discussing the features of the case Dr Perrigo removed the tubes and ovaries.

The operation that was carried out was therefore not the operation that it was primarily intended to have done, and was not the operation to which plaintiff had given her consent.

I know that with medical men, such occurs frequently, but in law, one must give a very good reason for doing something different from what a patient has given a consent to, or must stand the consequence in damages.

As good reasons for our change of operation, we showed that the operation was absolutely necessary and that it would have been impossible to have sewn her up after the first pus sac had opened, so as to obtain her consent to the removal of the tubes and ovaries, and later on if she was then alive to have performed the operation.

If she had been sewn up perhaps two days would have elapsed before she was entirely herself, and could have given a reasonable decision, and in such delay general peritonitis would have set in, and she would have died.

The operation as performed was therefore performed by the hospital staff, using their discretion, acting without the actual consent of the patient, in order to do a humane action.

In answer to the special allegation of plaintiff, that we had deprived her of the joys of matrimony, we declared that if she had never been operated on, if the staff had never removed these parts, even if she had out-lived the dangerous illness which would have very soon set in, she would have been an invalid for life, and that she could never have had children.

Operation or no operation, the Fallopian tubes were so congested, clogged up with pus that she could never have borne a child. All her generative parts were spoiled—ruined.

Previous to the operation her condition was that of sterility, she could not have become pregnant, so this side of her house of cards was rudely thrown to the ground, her own experts would not back up these flimsy pretensions.

We further pleaded, that, not only did the operation not cause any damages, but, on the contrary, it was the means of her continuing life, and, was absolutely necessary for the restoration of her health. Further, that as she gave her consent to Dr Springle to an operation, he was justified in doing everything in his power to remove the fatal disease from her body, which if left there, would have proved her destruction.

The case came on for trial before Mr. Justice Curran, on January 19th, and after both parties had made a concise statement of facts, the plaintiff was put into the box on her own behalf.

I am not going over her evidence but will only say that in trying to make the most of her cause, she was lead into some gross contradictions and took up some positions which her friend, who followed, and whom we had had excluded from the Court during plaintiff's examination, could not substantiate.

The French surgeon who next took the stand gave us in cross-examination, just such evidence as we intended putting in ourselves.

Among other things he said was, that in order to form a just opinion about a surgical case, he must see with the eye and touch with the fingers, he otherwise would not care to criticise a confrere as there might be extenuating circumstances about which he could know nothing. One could not otherwise express an opinion.

We brought out just a few little matters which showed that plaintiff could not be relied on, so that any sympathy that the Court might have had for her as a woman, was fast vanishing by the time we were called upon to make our enquete.

For the defence, Drs Springle, Perrigo and Tatley, after relating what details each knew of the operation, and what lead up to it stated, (1) that the condition found, was that of pyo-salpingitis and tubo-ovarian abscess, with the accompanying adhesions, involving both sides, (2) that the operation had to be performed in order to save life, (3) that it would have been impossible to bring patient to, and then have operated, (4) that it would have been criminal in the eyes of your profession, to have left undone, what they found out ought to have been done, and which they did, (5) that patient's generative apparatus was in such a state that, if, no operation had ever been performed she could not have conceived, and, borne a child. (6) that it was a very ordinary occurrence for surgeons, in order to do their patients justice, to do something, that was primarily never intended, or spoken of, and (7) that no surgeon would operate without a free hand, untrammelled by restricted conditions.

As soon as Dr William Gardner had given his testimony the Judge, as we had anticipated, refused to hear further evidence on our part, being perfectly satisfied that we had made out a sound defence, and

called upon plaintiff to submit medical evidence in contradiction, to ours. As plaintiff was unable to do so, the Court, most dramatically without even calling upon Counsel, immediately dismissed the action, a most unusual occurrence in important cases.

Let us now see what his Honour has decided.

Permit me to read some extracts from this most important judgment.

After reciting the pleadings the judgment reads :—

“Considering that it has been proved that the plaintiff went into said Western Hospital for the purpose of bearing a slight operation, performed upon her womb, and that after the abdomen had been opened, for the performing of such operation, it was discovered that the ovaries of the plaintiff were honey-combed with sacs of pus, and that the tubes leading from said ovaries to the womb were clogged with matter, in a state of putrefaction : that this state of the plaintiff was discovered, through the bursting of one of said tubes, which emitted pus, in considerable quantities.”

“Considering that the three regular practicing surgeons present, including the defendant, agreed that under the circumstances, that it was absolutely necessary for the preservation of plaintiff’s life, that the ovaries should be removed at once.”

“Considering that it was impossible to obtain plaintiff’s consent to such operation at the time, as she was then unconscious.”

“Considering that the surgeon performing an operation is in duty bound to do everything necessary for the preservation of the life of the patient, according to the circumstances of the case, as they may arise.”

“Considering that under the roof made in this cause, defendant is shown to have acted legally, and with prudence, and with every necessary precaution, so that he is utterly blameless of the charges set forth against him by plaintiff.”

“Considering that plaintiff has failed to establish her allegations and defendant has justified his plea.”

“Dot dismiss the present action of plaintiff.”

What better justification could we have ?

What higher praise of the skill, care and attention shown in this matter by those connected with the Western Hospital ?

What greater tribute could be rendered to their keen sense of duty as demonstrated in this case ?

PREPARING FOR THE CASE.

Although I made a search in several score of French and English books on Medical jurisprudence, Tort’s, Negligence, Delits and Quasi-Delits, outside of the case of Beatty & Cullingworth, I found nothing

exactly in point, but, I would like to set out to you what are the general principles of law in such matters.

You will recollect that it was not Dr. Springle who performed the operation, but, that it was the hospital staff. That we pleaded, that, inasmuch as Dr Springle did not personally perform the operation, in law he was free from any responsibility. Our object in so doing was, that, if matters came to the worst, and the Court should be against us on every other point, we would be able to have the action dismissed on that ground. Ordonraux, one of the best on medical jurisprudence, in section 88, says—“If the consulting surgeon be called in for the purpose of performing an operation, and does perform it, he gives a new direction to the case and becomes responsible for the immediate effects of such operation.”

We believed that, under that authority, Dr Springle would have been relieved, but, fortunately for us, it was not necessary to rely on any such technical point.

Just here, I beg to say, that while I can quite understand a hospital endeavoring to relieve itself of some action, taken against it because of some bungling of its employees, I certainly believe that it is its duty to take up the defence of any of its staff who are sued under such circumstances as these. Its staff are its agents, and as such agents the hospital should indemnify them for all obligations contracted by them within the limits of their powers.

As you all know a doctor is responsible for any damage caused by his imprudence, negligence, inattention, want of observation or maladroitness, or by his doing some unusual treatment—trying an experiment—instead of doing the ordinary accepted, scientific established way.

Further, that the general rule as to operations is that the surgeon must inform his patient of the nature of the operation to be done and must obtain consent before operating.

Instead of reading you a dozen paragraphs on this subjects, I will simply give you an extract from Beavens, on Negligence, Vol. 2, page 1402, which puts this point in a nutshell. He states :

“It is moreover clear that treatment involving probability of danger cannot be implied to a patient without some communication to the patient, and some expression or signification of consent by him”.

Lower down on the same page he sets out that:—

“The patient should be given a general intimation of the likelihood of pain or danger arising in a particular direction without a scientific ally accurate specification of the probabilities to which a patient would be exposed.”

That then is the general law on the subject that consent must if possible be obtained.

However, our case was altogether different. Ours was a case where it was impossible to obtain a consent, and it was absolutely necessary to do immediately what was eventually done.

Fortunately for the medical profession, seldom, if ever, has this matter been brought before our Courts. Pollock, one of the best authorities on "Torts," under the heading of "Works of Necessity" refers to this matter, and states, that an action would not lie against the first passer by, if he picked up a man rendered insensible by an accident, or, against a competent surgeon, who, if he performs an operation, in order to save a man's life, performs it without waiting for the man to recover consciousness and give his consent.

These works of charity and necessity must be lawful, as well as right, and are a justification to themselves. He gives the example of the captain of a ship casting the goods overboard, or, otherwise sacrificing property.

Treating of consent.

The American and English Encyclopedia of law, treating of consent states, that, if a person is in such circumstances, as to be incapable of giving consent to a surgical operation or to the infliction of other bodily harm, of a similar nature and for similar objects, it is not a crime to perform such operation, or to inflict such bodily harm upon him without his consent, or, in spite of his resistance.

The following illustrations are given :—

1. A is rendered insensible by an accident, which renders it necessary to amputate one of his limbs, before he recovers his senses. The amputation of his limb without his consent, is not an offence.
2. If the accident made him mad, the amputation in spite of his resistance, would be no offence.

But while the principle is to be found in the above, this case is a very different one ; an ordinary one for the surgeon but a very extraordinary one to be brought before the Courts. The only similar case from a legal point of view that I know of, is that of Beatty and Cullingworth, which is reported at length in the *British Medical Journal*.

Whilst operating, a surgeon suddenly finds out, that, to do his patient justice, he must change the operation, must do something that he never anticipated, something that he did not speak about to his patient and for which he has not, nor cannot have consent. What must he do ? Must he shirk his duty ? Must he hesitate to do, what he, as a medical man, considers to be his duty ? and do the first operation for which he has a consent, or, must he take the bull by the horns, and do what he thinks is the right thing to do ? Do something perhaps entirely different from what was first intended, and something, for which, of course, he has no consent from the patient ?

The case of Beatty vs Cullingworth was decided in favor of the

Doctor, giving him discretionary powers, and, we have now here, in the Province of Quebec, the final judgment of the Superior Court, which permits you, almost commands you, where no consent can be obtained, to follow your best instincts, to use your utmost skill, and do what you believe to be the right and proper action.

Do not, for a moment, fail to recollect that it is always your duty, whenever it is possible to forwarn the patient of his danger, and to obtain his consent, of the performing of the necessary operation, and whatever it may entail.

Now for a few practical suggestions.

Law is expensive and one of my objects in life, as a lawyer, is to keep my friends out of law. How can I help you in this matter? Well, all of you know that there is nothing in law to prevent any one of your patients, or, any one at all, for that matter, is going to a lawyer, trumping up a case and entering suit against you.

While I cannot prevent that, perhaps the following might help to minimize the danger :—

No. 1. A physician must be very careful in talking about the ailments of his patients. He has no right to noise abroad the details of the maladies of his patients mentioning their names. He has no right to say, even to his best friends, for instance, that he has just had the honor of removing Miss X———'s tubes and ovaries, and, if asked, "What brought about the condition" reply "O, a horrible dose of gonorrhœa". That won't do.

An English practitioner was let in for some thousands of pounds damages, for just a little tale like that. You may speak as much as you like about the operation, but, you must not mention the name of the party operated on.

No. 2. In examining women, if possible, have a third party friendly to yourself present, so that, if the patient be hysterical, the third party will be able to state exactly what caused the hysteria.

No. 3. Inform the patient, as fully as possible, of the nature and likelihood, of danger of the operation, or treatment to be undergone.

No. 4. Before doing an operation, obtain in writing the consent of the patient. If a married woman, if possible, have the husband sign the consent as well as the wife, and if the patient be a minor, obtain the consent of the child's guardian, or its father or mother I would suggest something in the following form:—

"I consent to the doing of an operation to remove.....
".....,and to the doing of such further or other matter as Dr.
"X. shall deem necessary."

Sign and witness.

No. 5. When operating, have one or more practitioners present.

In Court the views of one surgeon who was present at the operation

in dispute, backed up by another, who was also present carries very great weight.

Those of you who were in Court, last month, while you must have been struck at the impression made by Dr Springle, and noted that as Dr Perrigo gave his evidence, any shadow of doubt, which may have existed in the judge's mind was gradually dissipated.

Summing up, what then are the Discretionary Powers of a surgeon ?

Is the law different from that high standard which your *Alma Mater* instilled in you and which each of you daily sets for himself ?

No. The law demands that when you are placed in circumstances wherein it is impossible for you to explain what ought to be done, impossible for you to obtain a consent to its doing, you must use your discretion.

You must do with all your might, with all your skill, with all your care and knowledge, whatever you deem best and right for the patient.

You Surgeons have always been noted for your being good Samaritans to the poor and sick, and I have reason to believe, that even such base ingratitude as was used towards Dr Springle in this case, will not deter him or any one of you from doing again, what he did then, and what I understand you are always doing, giving your best time and energies in doing such humane acts, as this one was.

In closing permit me to parody Falstaff's time-worn lines in Henry IV. and say :

"The better part of valour is discretion", in the which better part, may you save many lives.

STEREOSKIAGRAPHY.

BY

G. P. GIRDWOOD, M.D., C.M., M.R.C.S. (Eng.), F.R.S.C., F.I.C., F.C.S. &c.,
Late Assistant Surgeon Grenadier Guards; Consulting Surgeon to the Montreal
General Hospital; Professor of Chemistry, Medical Faculty, McGill College.

When Röntgen rays were first used for taking skiagraphs of the bones and other parts of the body, and of metallic substances therein; the difficulty of locating the exact position of these foreign bodies became evident. And in skiagraphs taken by the Röntgen or X Rays of bullets or needles in the hand, foot, or other parts of the body, the relative depth of the foreign body from the surface or its relative position to bones was very difficult to determine, the only practical evidence available being the sharpness of definition of the shadow. The nearer the object is to the surface upon which the shadow is cast, the sharper is the outline of the shadow, this sharpness of shadow being a very indefinite indication.

The taking of two skiagraphs from two points at right angles to one another and determining the position by the intersecting of the lines drawn from those points, gave some further information, but the difficulty of being certain that the rays which come off from the platinum distributor in the Crooke's tube are in the direct lines which were at right angles to one another, still left the matter in some doubt. Then wires were put at right angles to one another across the surface of the part to be skiagraphed, so that the skiagraph showed the relative position of foreign bodies or at any rate of the shadows of these wires, and the intersections of the lines producing the shadows indicated the position. This was still not all that was desirable, and in the case of the hands a skiagraph may be taken either with palm down or palm up, and the foreign body may be equidistant from either surface, so that sharpness of shadow would be the same on either side. And if a second skiagraph were taken from side to side of the hand, the carpal and metacarpal bones from this view lie over one another to such an extent that there is great difficulty in obtaining two skiagraphs at right angles to one another, which show what is wanted. Under these circumstances the idea was suggested of taking two pictures of the part, the tube being moved to a distance of 2 1-2 inches to the right or left of the original position between the taking of the two pictures, the part skiagraphed remaining in the same place. If the platinum plate in the Crooke's tube was so placed in each case that a normal from the surface thereof would strike the same spot, then the two skiagraphs would present exactly the same differences as the pictures presented to each eye would have, and

the skiagraphs so taken would give the true stereoscopic effect of seeing every part of the picture in its proper relative position to surrounding objects.

This idea was carried out, and the results were exhibited in Toronto at the meeting of the Society of Railway Surgeons, last June, and in March last, to my friend, Dr. Francis Williams, in Boston, who has done so much for Skiagraphy on this continent.

In carrying out this idea, and preparing the pictures now shown, which were the first, a piece of lead was fastened with a little gum paper on the back of the left hand over the metacarpal bone of the index finger. A second piece was placed, and fastened also with gummed paper in the palm of the same hand opposite to the metacarpal bone of the ring finger, and the hand placed palm down on a plate wrapped in yellow paper, in the usual way. The plate was put into the bottom of a cardboard box without a lid and with a slit cut in one side large enough to admit the wrist, a line of pencil marked on the wrist, so as to put the hand back in the same position, and a pencil outline of the hand made on the yellow paper round the fingers. Then a plumb bob was suspended over the centre of the hand, and the Crooke's tube arranged so that the centre of the platinum plate should be 1 1-4 inches to the right of the pendulum string, and 12 inches from the plate, and the tube was rotated in the clip until a normal from the platinum distributor should strike the same point as the point of the pendulum bob. With the pendulum moved out of the way and one picture taken, another plate was placed in the same yellow paper, the pendulum bob replaced, and the tube so arranged that the centre of the platinum plate was 1 1/4 inches to the left of plumb bob line, and so inclined that the normal thereto would strike the same spot as before, and a second picture taken. The pictures developed in the usual way, gave two full size, indeed, slightly magnified skiagraphs of my left hand, and, when cut in pieces small enough to mount as stereoscopic pictures, at once gave the true stereoscopic effect.

Being desirous of having the pictures reduced and in the absence of camera to do it at the moment, recourse was had to a photographer to reduce the originals to the usual stereoscopic size. Here comes the trouble, for unless the photographer will do implicitly what he is told and nothing else, it will be quite possible to have hands of opposite sides put together, or to have the hand reversed altogether, so that the hand appears with the palm up instead of down, or it may be with palm, up or down, of the hand of the opposite side, all of which may be seen in the specimens now shown. Partly through this want of appreciation on the part of photographers, partly on account of business preventing, and partly one thing and partly another, the getting of these skiagraphs reduced and mounted properly, occupied a large part of the summer; but success was at last attained, and those shown are the result.

The skiagraph when taken has to be copied by camera, using the original skiagraph as a transparency, and putting the film side towards the camera, the pictures reduced to 2 1-2, to 2 3-4 inches wide. These pictures are reversed from the originals as well as reduced, and these reversed pictures when printed give prints with white bones, white pieces of metal, on a black background. On mounting these with the right eye-picture to the right eye, and the left to the left eye, and viewing in a stereoscope all objects stand out in perfect relief.

But, if the photographer use the original negative as a transparency to produce his diminished picture with the film side away from the camera he will produce diminished prints with white bones and white pieces of metal, but the hand will be reversed also, and instead of having left hand palm down you will now have right hand palm down, and, having obtained these two sets of prints showing the two hands palm down, if you reverse the prints in mounting, you will have the right and left hands with the palm up instead of down.

All four of these photo-stereo-skiagraphs have been reproduced by the process of what is called half-tone, and been printed in the ordinary printing press, of which copies are here produced.

In the British Medical Journal of Dec. 3, 1898, an excellent account of the process for producing Stereoscopic Skiagraphs is given by Dr. Mackenzie Davidson. His process differs from that now recommended only in not making the normals of the platinum distributor in the Crooke's tube in the two positions converge. His are taken as though seen with two eyes, whose axes are parallel instead of converging on a point 12 inches distant, representing the appearance presented to each eye, when the axis of vision is convergent. The question of convergence or non-convergence of the lens in taking ordinary stereoscopic photographs was worked out in the early days of photography, some forty or fifty years ago, when Latimer Clark's camera for taking stereoscopic pictures was introduced, and the rotundity of the convergent lenses is an improvement. It is sometimes an advantage to mount the pictures to the wrong eyes, reversing thereby the side of view, as by so doing it is possible to obtain the effect of seeing the object stereoscopically from both palmar and dorsal aspect.

The four stereoskiagraphs now shown will, when viewed in the stereoscope, show left hand palm down, right hand palm down, left hand palm up, and right hand palm up. All are produced from one original pair of stereoskiagraphs taken, reduced, printed, and mounted in the manner described.

In these four pictures there is a piece of lead opposite the metacarpal bone of index finger, on the dorsum of hand, and another opposite metacarpal bone of ring finger, on the palm. In these pictures these pieces of lead appear at the same depth as regards the hands, and in all four, nearly

in the same places, but appear to vary in position as regards the bones. This variation is due to the changed position and convergence of the tube in the two positions.

The first pair, representing left hand palm down, were the first pair. These reversed produced right hand, palm down, and the reversal of the pictures in mounting from left eye to right, and vice versa, give the effects of turning the hands over, and viewing from the opposite side.

This whole town, as well as Boston, was ransacked to obtain a portable stereoscope but without effect, and as a stereoscope is now almost a thing of the past, seldom seen in any house, it became necessary to make a portable one. The necessity culminated in the home-made stereoscope produced which is simply a pair of half lenses mounted with their thin edges to the bridge of the nose between two pieces of cardboard, with a thin septum of blackened cardboard suspended from the middle to cut off vision from either eye beyond median line.

It is quite possible for any one with practice to see these stereoscopic pictures without a stereoscope. By converging the eyes on infinity, there is a point where these pictures will be visible, one in the middle of the other two, this one is stereoscopic, and formed by the overlapping of the other two, and in this middle one the appearance of perfect solidity is seen.

The term stereoskiagraph, which has been adopted seems at first a contradictory term, and some may cavil at the idea of a solid shadow picture, but on putting one into the stereoscope the correctness of the application will become evident, and it will be seen that the appearance produced is that of the solid, from which the shadow was cast.

This method of exposing to view bones and objects within the soft tissues will greatly enhance the use of Röntgen's marvellous discovery to the surgeon, and it is to be hoped that physicians will also be allowed to share in the advantage. For them to be able to see stereoscopically the form and position of solidifications, of aneurisms, or hypertrophies, etc., will be of singular benefit to diagnosis.

In conclusion, gentlemen, there may be a question as to the correctness of the term skiagraph, and some may call the object a skiagram. Some years ago a similar question arose as to the use of the words telegraph and telegram, which was settled as telegraph, the instrument—telegram, the writing the result of the working of the instrument; in the present case, a reference to the lexicon at hand gives *Γράμμα*, ἄτος, τὸ, a character engraved or written, a letter of the alphabet, a written promise to pay, a debt. *Γράφη* ἡς ἡ, a writing, a picture, the scripture, and in the same lexicon the word *Σκιαγραφία*. ας, ἡ, the tracing of a shadow, or outline, hence a sketch, so that it seems probable that the presently used term is correct, or has at least the authority of a lexicographer.



No. I.—Left hand palm down.



No. II.—Left palm hand up.



No. III.—Right hand palm down.



No. IV.—Right hand palm up.

REPORT ON THE CASES OF TYPHOID FEVER ADMITTED INTO THE ROYAL VICTORIA HOSPITAL DURING THE YEAR 1898,

BY

WILLIAM O. ROSE, M.D.,
Senior Resident Physician.

During the year 1898 there were treated in the wards of this Hospital ninety-five cases of typhoid fever, sixty-six males and twenty-nine females. Of these cases ninety-three were treated to a conclusion, the remaining two cases are still in the hospital and both convalescent. They are not included in the following analysis.

There were four deaths, or a mortality of 4.3 per cent. Death resulted in two of the cases from profound intoxication, in one from hæmorrhage, and in the fourth from perforation.

On an average, patients were admitted on the tenth day of the disease, The following data may be of interest :

Age—

The average age of all the cases was twenty-five years, the youngest four years and the oldest fifty-eight.

By decades they would be arranged as follows :

Under 10 years.....	5 cases.
Between 10 and 20.....	20 “
“ 20 and 30.....	50 “
“ 30 and 40.....	9 “
“ 40 and 50.....	7 “
Over 50 years.....	2 “

Season—

The largest number of cases developed in September, while the smallest number occurred in March and in November.

65 per cent. of the cases developed in July, August and September.

14 per cent. in October, November and December.

14 per cent. in April, May and June.

7 per cent. in January, February and March.

Duration of Cases—

The average number of days in the hospital was 38.16.

The average duration of the fever was 29 days.

The longest period of fever was 68 days.

The shortest period of fever was 8 days.

Symptoms—

ONSET AND COURSE :

In 94 per cent. of cases the onset was gradual, the most frequent

symptoms being : General malaise, frontal headache, anorexia, weakness, pain in the back, chilly sensations, and insomnia. Of these by far the most frequent were general malaise and frontal headache.

In two cases the principal complaint was pain in the neck.

In 6 per cent. of the cases the onset was acute with distinct rigor.

Chills occurred at or near the onset of the disease in 15 per cent. of the cases.

In 30 per cent. vomiting occurred during the first few days of the disease. In several cases it was, however, due to other causes, such as pregnancy.

Diarrhœa was present at the onset in 25 per cent. of the cases, but in not one case did it persist throughout the course of the disease and consequently enemata were given as a routine practice.

Epistaxis occurred in 10 per cent. of cases.

Delirium was present at one time or another in 11 per cent. of the cases. It was a very marked feature in all the fatal cases. In one case acute dementia developed on the tenth day of disease, and the patient became cataleptic and could not be induced to speak for six days.

ERUPTION :

An eruption occurred in 75 per cent. of the cases ; in one case the eruption was the so-called " tache bleuâtre," and in another case it was petechial, while in all the remaining cases it was of the nature of " rose spots."

The earliest appearance of the rash was on the 3rd day.

The latest appearance of the rash was on the 60th day.

The shortest duration of the rash was 2 days.

The longest duration of the rash was 53 days.

The average duration of the rash was 12 days.

SPLEEN :

The spleen was palpable in 64 per cent. of the cases.

In one case it was palpated as early as the 3rd day.

In another case it was not palpable until the 28th day.

On an average the spleen remained palpable for 14 days.

In one case it was only palpable for two days, while in another it could be palpated for 37 days.

RELAPSE :

A definite relapse occurred in six cases.

The longest duration of the relapse was 32 days.

The shortest duration of the relapse was 11 days.

The average duration of the relapse was 19 days.

In two of the cases the relapse was much more severe than the original attack.

FEVER :

The highest temperature in any of the cases was 106° .

In one case the fever did not go above $100\frac{2}{5}^{\circ}$.

The average maximum temperature in all the cases was $103\frac{4}{5}^{\circ}$.

In 50 per cent. of the cases the temperature went above 104° .

Complications—**INTESTINAL :**

Perforation of the bowel occurred in one case on the eleventh day.

(See appended notes Case III.)

Intestinal hæmorrhage occurred in five cases,—in one case on the eighteenth day of fever and proved fatal ; in the remaining cases recovery took place, although in one the loss of blood was very great.

CIRCULATORY :

Cardiac dilatation was noted in two cases.

Systolic murmurs were noted in only four cases.

Femoral phlebitis occurred in one case, and brachial phlebitis in one case.

Tachycardia was present in two cases during convalescence.

Angio-neurotic œdema occurred in one case.

RESPIRATORY :

Broncho-pneumonia was present in two cases.

Pulmonary œdema in one case.

Pleurisy occurred in two cases, in one of which it was an alternating pleurisy.

Tuberculosis was a complication in two cases.

Bronchitis was marked at onset in thirty-two cases.

OTHER SYSTEMS :

Acute nephritis occurred in two cases.

Otitis media in two cases.

Secondary syphilis in one case.

Pregnancy about the fourth month was a complication in two cases.

Although hydrotherapy was resorted to in both cases, the pregnancy was not interrupted.

LATE COMPLICATIONS :

Two of the patients were seen some months after leaving the hospital, both suffering from periostitis of the ribs.

WIDAL TEST :

This was employed in all cases and was positive in all but two cases.

It was obtained in one case on the third day and was as a rule present on admission, *i.e.*, about the tenth or eleventh day of the fever. On an average it was found to be present as late as the thirtieth day. In one case it was present as late as the sixty-first day. It was found to be of considerable value in the differential diagnosis of some cases where the early symptoms pointed to tuberculous meningitis, septicæmia, etc.

Synopsis of fatal cases :

CASE I.—F. B., male, æt. 19, student. Admitted April 11th, 1898. No history obtained. On admission he was extremely delirious, subsultus tendinum very marked, constantly trying to get out of bed, picking at the bed clothes, etc. Insomnia; constipation; retention of urine; spleen palpable; rose spots over abdomen; Widal test positive.

SUBSEQUENT EVENTS.—On the second day after admission he was still profoundly comatose; unable to take nourishment or medicine, so was given nutrient enemata. On the fourth day the delirium began to pass off. Pulse 130, weak and irregular. On seventh day there was a discharge of pus from right ear. On eleventh day patient became very weak, extremities cold and cyanosed. No delirium. Patient gradually became weaker and more cyanosed. He again became delirious. Pulse finally became imperceptible at the wrist and patient died on the thirteenth day after admission.

Cause of death, toxæmia.

CASE II.—Male, æt. 34, laborer. Admitted Aug. 4th, 1898, on the tenth day of illness, complaining of headache, backache, anorexia, insomnia, and diarrhœa. He had been delirious at times since the third day of his illness, when he took to bed. On admission, a poorly nourished man, very weak, and at times quite delirious, and when not so his statements were utterly unreliable; profuse eruption of rose spots over abdomen; slight bronchitis; no abdominal rigidity or tenderness. Urine containing albumen, granular and hyaline casts. Widal test positive. Temperature 102.2°, pulse 120, respiration 32.

SUBSEQUENT EVENTS.—After admission patient continued delirious for about six days, and had very laboured respiration. Constipation was a marked feature. On the 7th day after entering the hospital he was more rational, and felt better; complained of no pain, and seemed to be doing nicely. Suddenly, however, on the 8th day, *i.e.*, the 18th day of fever, he had severe abdominal pain, and passed $\bar{\text{viii}}$. of dark clotted blood; patient sank rapidly, and in six hours the temperature dropped from 102.2° to 95.2°; pulse hardly perceptible. Death ensued in about nine hours.

Autopsy showed that the last six inches of the ileum was almost entirely denuded of mucosa in its entire circumference. The whole of the ileum and large intestine was filled with blood. Spleen, bile, and mesenteric glands, gave a pure culture of the typhoid bacillus.

CASE III.—J. M., æt. 22, cabman. Admitted Sept. 7th, 1898, on the 4th day of illness, complaining of pains in the neck and abdomen and general weakness. These symptoms came on after a drinking bout, and he was compelled to go to bed on the second day. On admission, a well-nourished young man; tongue coated; bowels constipated; slight abdominal tenderness; spleen extends an inch below costal margin; urine containing a trace of albumen. Temperature 102.2°, pulse 84, respiration 24.

SUBSEQUENT EVENTS.—For three days after admission patient seemed to be doing well. Pulse was regular and strong. On the 5th day there was slight cyanosis, otherwise his condition was good. Seven days after admission, *i.e.*, the 11th day of disease, patient complained of severe pain in lower abdominal region after urination. Three hours after, he vomited a large quantity of greenish fluid. On the 8th day the pain continued and the abdomen became distended and rigid, especially on the right side. Liver dulness slightly diminished. Considerable hiccoughing. On 9th day, *i.e.*, the 13th day of fever, distension was more marked. Liver dulness obliterated. Abdomen very rigid. Patient became delirious, deeply cyanosed, copious perspiration; pulse 180 and very weak. Death occurred 42 hours after onset of pain.

Cause of death, perforation.

CASE IV.—J. A. W., æt. 23, clerk. Admitted October 5th, 1898, on the eighth day of illness, complaining of headache, fever and anorexia. Patient had been an epileptic for thirteen years, and during that time had been constantly taking very large doses of chloral and the bromides. On admission, a fairly well-nourished man of average build; slightly cyanosed; low muttering delirium; subsultus tendinum very marked; "rose spots" over chest and abdomen; some œdema of the bases of the lungs. Teeth covered with sordes; tongue dry and coated; abdomen distended; albumen and a few granular casts in the urine. Temperature 102°, pulse 120, respiration 34.

SUBSEQUENT EVENTS.—Patient continued in his typhoid state with involuntary urination and defecation. Pulse very weak and rapid. He became gradually weaker, and pulse went up to 170, and was hardly perceptible. Death occurred thirteen days after admission, *i.e.*, the twenty-first day of disease.

Cause of death, toxæmia.

SIXTEEN CASES OF SERUM-TREATED DIPHTHERIA.

BY

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Attached to this report is a table summarizing my experience in the treatment of sixteen cases of diphtheria. Case 15 was my own, I having contracted the disease from the fatal attack of diphtheria which was the single exception to the rule of prompt relief, speedy convalescence and complete recovery. I am confident that the anti-diphtheritic serum, promptly used, was the means of saving my life, or at least preserving me from a long and serious illness.

The table of my cases shows that sixteen cases in all were treated during December and January, and thirteen persons immunized. All these, with the exception of one, were taken early and all made a speedy and uneventful recovery. Relief of the symptoms was very rapid, and complete cure ensued in from twenty-four hours to two and three days. In no case did the first injection fail of its effects; temperature was reduced and membrane began to disappear. Not a single case has as yet been followed by either post-diphtheritic paralysis or by nephritis. Judging by my own clinical experience in St. Thomas' Hospital, London, though some of these cases were mild, others represented symptoms which, under other circumstances, I should have considered alarming, e. g., cases 10 and 8, both these had temperatures of 104°, and the fauces were coated with large quantities of gray membrane, the children themselves presenting the appearance of extreme illness and prostration. The antitoxin used was obtained from the Biological Department of Parke, Davis & Co., and bore date of October 22, 1898, and November 21, 1898; both seemed equally efficient.

Case 14, fell into my hands at a late day, about the sixth day of the disease. In the first twenty-four hours I injected 4500 units (P. D. & Co.), all I had on hand, and wired for more to Vancouver. The disease appeared to be checked. Soft weather caused a delay on the line and eighteen hours were lost; during this time the disease began to make rapid progress, the membrane spreading to the nares and larynx, and when a fresh supply arrived the case was almost hopeless. On its arrival I injected 4500 units at one dose, and four hours afterwards 2500 more; all I had on hand, and before more could arrive the child died.

The last case, 15, is my own; the disease was doubtless contracted from the above case, I went to bed in my usual health at 1 a. m., on Thursday and awoke on Friday morning with a sore throat and a feeling

of prostration, my temperature was 100°, but no membrane had formed. At 11 a. m. I injected with a hypodermic 500 units (P., D. & Co.'s) into my left arm; in a quarter of an hour I began to feel decided relief and my temperature was 99.8°, at 11.30, in half an hour's time, my temperature was 99° and the soreness in the throat almost gone; at 1 p. m., my temperature was 98.2°. My own opinion is that the dose I took was too small, for at 2.30 I began to feel ill again, and the temperature rose to 102°, and by 4 o'clock I was extremely ill, almost delirious, throat very sore, nose and cervical glands enlarged. At 8 p. m., I got another medical man to inject 1500 units into my right arm, in about half an hour I began to feel relief, and by midnight my temperature had fallen to 102°, and on Saturday morning was normal. I remained in bed all day, feeling very prostrate and weak; toward night the throat began to be more painful again and a small spot of membrane was noticed on the fauces; another injection of 1000 units was given, and the next day I was almost in my usual health.

The notable points in this case are the extreme rapidity of action of the serum, which could be compared to a hypodermic of morphine for relief of pain. Also the fact that there are no ill-effects from its administration. I am firmly convinced that its prompt administration saved me from a long and severe illness if not from death.

From careful observation of these sixteen cases, there are several important facts to be observed. The serum should be given as early in the disease as possible. It has no unpleasant or harmful effects and can be used fearlessly. In late or severe cases it should be given in large doses, and if temporary relief is obtained it should be administered again if the temperature rises and the symptoms begin to return.

I would also point out another use to which it may be put, and that is its value as a means of diagnosis. I would urge its administration in all cases of sore throat in which there is any suspicion of diphtheria, especially during an epidemic of that disease; so certain is its action, that should that disease be present the symptoms will ameliorate, and should no effect be obtained the case will be scarlet fever or ordinary tonsillitis. The injection should not be made in the arm, as it will be followed by local dermatitis or urticaria.

It would appear to me that the adverse opinion given by some good authorities on the value of the serum treatment is due to the fact that they are hospital surgeons, and as such only see such cases as are far advanced. For instance, if my experience had been confined to case 14 my confidence in the serum would have been severely shaken, nor would I probably have had the confidence to administer it in such large doses; our experience at St. Thomas' was confined to such cases, admitted for tracheotomy. In the face of such evidence as these cases give, it is clear, that, if the medical attendant is capable of diagnosing a case of diphtheria, and uses the serum promptly, this disease is no longer the

formidable scourge of a few years age, but can be easily held under control, and an epidemic stamped out by free immunization.

Case.	Age.	Disease.	Day.	Relief.	Cured.	After effects.	Units of Antitoxin.
1	12 years.	Diphtheria and scarlet fever.	1st	In a few hours.	3rd day..	Urticaria and pain in joints.	5,000
2	11 "	Diphtheria	1st	" " "	24 hours.	Nil	1,500
3	26 "	"	1st	" " "	24 hours.	Nil	1,500
4	22 "	"	1st	" " "	24 hours.	Nil	1,500
5	50 "	"	2nd	" " "	2nd day..	Nil	2,500
6	25 "	"	3rd	" " "	4th day..	Nil	4,500
7	35 "	"	2nd	" " "	2nd day..	Nil	4,500
8	13 "	"	1st	In two hours ..	2nd day.	Nil	1,500
9	8 "	Diphtheria and scarlet fever.	1st	In a few hours.	2nd day..	Nil	500
10	10 "	" " ..	1st	" " "	2nd day..	Nil	500
11	23 "	Diphtheria	2nd	" " "	24 hours.	Nil	1,500
12	26 "	"	1st	" " "	24 hours.	Nil	1,500
13	7 "	Diphtheria and scarlet fever..	1st	" " "	24 hours.	Nil	3,000
14	14 mos..	" " ..	6th or 7th.	No relief.....	.....	Death.....	12,500
15	34 years.	Diphtheria	8 hours.	Immediate.....	.....	Nil	3,000
16	10 "	"	3rd	.....	6 hours.	Nil	1,500

Cases 15, 3 and 4 were injected in the forearm and all had slight urticaria locally, in case 1 the urticaria was general.

Eleven cases were immunised 500 units, of which only one took the disease, but that was on the day following the injection.

The term "relief" means either fall of temperature, or lessening of pain in throat. In no case were there any immediate unfavourable symptoms noticed in connection with the injections.

Case Reports.

APPENDICITIS WITH UNUSUAL CONDITIONS.

BY

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R. W., entered the Montreal General Hospital on January 14th, '99, for the relief of recurring attacks of abdominal pain. There was a clear history of five mild attacks of appendicitis since September '98, each attack accompanied by vomiting. He was operated upon Jan. 19th, during the interval, shortly after the last attack, while there was still present some tenderness in the lower right iliac region. The appendix could not be palpated. The usual incision was made. The omentum was found covering, and adherent to, the external and anterior portion of the cæcum. This was ligated and separated easily, leaving the cæcum quite free. No signs of inflammation were present, except a narrow strip adjacent to the usual situation of the appendix. A small puckered projection with an irregular edge showed where the appendix had separated. After further search the appendix was found in the mass of omentum ligated off, and adherent to the pelvic brim. It was separated and removed. Fearing that the loss of omental support might lead to the reopening of the cæcum, a few Lembert sutures were put in. Cultures were taken from the site of the appendix, and the wound was closed, leaving in a gauze drain. The pathological report by Dr. Anderson, shows that the cultures gave a negative result. The specimen is that of the appendix vermiformis showing considerable thickening of the coats, and on the mucous membrane there are several hæmorrhagic spots. A fæcal concretion was found. The case was unusual, inasmuch as complete separation of the appendix had taken place, without any escape of intestinal contents, or the formation of abscess. I have been unable to find a similar condition reported. The patient made a very good recovery.

These notes were taken from the case-report of my House-Surgeon, Dr. Alistair Smith.

MEMBRANOUS COLITIS DURING PUERPERIUM.

BY

N. D. GUNN, M.D.

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Mrs. B. primipara, aet. 24, was confined on December 16th, 1897. The following notes are taken from the daily record kept by Miss O'Connell:—

The labour was uncomplicated and not prolonged. There was no hæmorrhage or laceration, and the uterine contraction was good. *The first day* was uneventful, the pulse 62, and the temperature normal; the *second day* the nipples were sore to the touch.

On *the third day* the nipples, besides being sore to the touch, were noted to be cracked and fissured, but there was no rise of temperature. Slight pain complained of over the abdomen was looked upon as uterine in origin.

The fourth day, the abdominal pain was severe and griping, and not relieved by simple enemata. The pulse was 80, the temperature normal, and lactation was established.

The fifth and sixth days the temperature was still normal, the pulse 76, and the griping continued. The lochia were bright in colour and normal in amount and aroma. The nipples remained fissured and tender, causing much terror to the patient.

The seventh day the nipples were a little better; the pulse and temperature continued normal.

The eighth day, nervous symptoms were marked. There was twitching of the lower limbs, sudden outbursts of crying, and anorexia. Bromide of potassium was given in 15 grain doses, p.r.n.

From *the eighth to the eleventh day* there was no change except in the pulse, which became weaker, and ran from 84 to 90. Nursing was suspended, owing to the sore nipples and nervous condition of the mother.

The eleventh day the abdominal pain increased, and tenderness was noted over the bowels, but not over the uterus. There was some distension and gaseous eructations, but no diarrhœa. A simple enema produced two evacuations in the second of which there appeared for the first time membranous ribbon-like masses, white in colour, and also jelly-like masses of clear mucus. The temperature was 102° 2-5°, the pulse 120.

The twelfth day. The patient spent a good night, but awoke looking anxious and worn with pains in the bowels and lower limbs, but no diarrhœa. An enema again brought away much mucus, and many

membranous bands several inches in length. Temperature was 102 2-5°, pulse 114.

The thirteenth day was the worst during the illness. The temperature rose to 103 2-5°, the pulse to 128. There was great anxiety, complete anorexia with headache. Phenacetin in 5 grain doses every four hours, old port, 2 ounces every two hours, with a hypodermic of morphia 1-4 grain at night, was ordered.

The fourteenth day. The morphia produced a most happy effect, sleep was profound during the night, and the highest temperature 99°, and pulse 86. The evacuations still contained large amounts of mucus and membrane.

On the fifteenth day, the temperature had fallen to 98 2-5°, the pulse to 84. The wine was still continued. The appetite had slightly, and the spirits much, improved. The pain in the abdomen was almost gone and the tenderness fast disappearing. The bowels still required an enema, and the casts and mucus remained about the same in amount. In the latter no change was experienced until *the eighteenth day* when there was a decided diminution in the amount. On this same date a facial neuralgia developed with a subnormal temperature of 98 4-5°.

On the twentieth day the pain in the face was worse and some swelling appeared about one of the lower molars. The patient became highly nervous again, the mucus in the stools and tenderness over the abdomen were increased, and the temperature rose to 100 2-5°. The offending tooth was extracted under an anæsthetic on the twenty-third day, when the nervous symptoms subsided and temperature fell to normal. Morphine was discontinued and a tonic of nux vomica and dilute muriatic acid given in its place. Convalescence was fairly well established, the patient sitting up most of the day.

On the twenty-fifth day the nurse left and the patient assumed control of the child. The mucus had greatly diminished in amount, and was not present in every evacuation. By *the thirtieth day* the patient could be declared well, as the nervous symptoms were all gone, and the mucus shreds absent.

This case presented a very interesting diagnostic problem. With tenderness, rise of temperature, and fast pulse, one might suspect septic trouble, and it was only through the nurse's saving the membrane that the diagnosis was made so soon clear. I have not heard of a case in a puerperal woman, and I believe it to be a rare complication. The course was much shorter than would be expected as most cases of this disease last indefinitely. (I have one woman under observation who has suffered almost constantly for eight years.) I attribute the onset to the pain and worry caused by the child's nursing in a woman of a highly nervous organization. I attribute the hasty recovery to suspension of lactation, forced feeding, and the complete rest given by morphia.

THE LOCAL TREATMENT OF INTRA-UTERINE SEPSIS.

BY

A. GROVES, M.D., Fergus,

Hitherto the local treatment of sepsis of intra-uterine origin has been unsatisfactory, and in spite of modern aseptic and antiseptic methods the death record is yet by no means insignificant. The usual treatment by first curetting the uterus, and afterwards washing it out every few hours, with a solution of mercuric-chloride or some similar antiseptic solution is far from being followed by uniformly good results. Continuous irrigation is an advance upon intermittent washing, and in the cases in which I adopted it some years ago, I had good results, but the treatment is very wearisome and annoying to the patient.

In a case of intra-uterine sepsis we have to deal with a soft, flabby uterus, possessing feeble contractile power; in its interior are decaying shreds and remnants; and its absorbents are bathed in a highly septic and infective fluid. The problems are to get rid of or render innocuous the decaying material, to destroy or remove the septic germs, to seal up the absorbents, and to promote the contraction of the uterus. The treatment I now adopt and from which I have so far had unvarying success is as follows:—

I first explore the uterus with my finger, and if there is a retained fragment of placenta of any size it is removed with the finger nail. I never now use a curette, in septic uterus, for to me it seems most unscientific and dangerous to blindly scrape the inside of a uterus bathed with septic discharge. Every piece of epithelium removed, opens a fresh absorbing surface, so that we may consider that the more thorough the curetting the greater the danger to the patient.

My next step is to pass a cylindrical glass or hard rubber speculum of large calibre and through this wash the uterus thoroughly with warm water, passing the tube up to the fundus. When the water flows back clear, I inject tincture of the perchloride of iron. The syringe I employ for this purpose consists of a hard rubber tube about the size and length of a No. 10 catheter, in fact a No. 10 gum elastic catheter will answer very well, having attached a syringe bulb capable of holding an ounce or so of fluid. This syringe bulb I fill with the tincture or iron, pass it to the fundus, and inject it.

This excites a contraction of the uterus, expelling the fluid through the speculum. If the iron does not come away at once a second syringe-full is injected, which invariably induces contraction, with expulsion of

the fluid. The uterine cavity is again washed with water to remove any of the tincture which otherwise would trickle down and excoriate the vagina. This douching and injection should be repeated within thirty hours, and the treatment, if necessary continued until all danger is past. The effects obtained by injecting the iron, are:—First, the instantaneous destruction of all germs exposed to its action, for no germ or spore can withstand pure tincture of iron; in the next place all the absorbents are sealed up so that even if any septic matter remained in the uterus it would not be absorbed; and lastly, the uterus is stimulated to contract. This treatment is simple, safe, satisfactory and painless. No special skill is required in carrying it out, and there is no risk of injuring the patient. I believe a very considerable mass of placenta under the treatment above outlined, might, without danger remain in the uterus until it was disintegrated and expelled. In proof of the satisfactory results obtained by this method of treatment, I shall quote a few cases in the order in which they occurred, and without selection:—

Case I., Mrs. H., had been confined a week before I saw her. On my first visit, 10 p. m., March 28th, 1897, her temperature was 105°. F., and pulse 136; expression in every way bad; skin livid; chills frequent and severe; in fact, her condition was apparently hopeless. The uterus was explored with the finger, and found to contain only shreds, and acting on the principle that an attempt at scraping them away would open large absorbing surfaces, curetting was avoided. After thoroughly washing out the uterus with water the tincture of the perchloride of iron was injected, and nothing further done locally. By the evening of the 29th the temperature had fallen to 103°. F. and her condition was greatly improved. Until 9 p. m., on the 30th, steady improvement went on and her temperature fell almost to normal; at this time a severe chill occurred, and at 10 p. m., her temperature was 105°. F.. The uterus was again washed out, and the iron injected, and by next morning her temperature has fallen to 100°. This last chill, in my opinion, was due to overlooking the fact that the duration of the protection afforded by the iron is limited, and that not more than twenty-four or at most thirty hours should elapse before a second injection is given. The injection was repeated on March the 31st, and on April 1st, after this the patient went to on an uninterrupted recovery.

Case 2. Mrs. C., on the fourth day after her confinement took a severe chill, and her temperature at 8 a. m. on the following morning was 103° F. At this time the uterus was washed out and injected. Her temperature on the following day was only 100° F., when a second treatment was given; after this steady progress to recovery took place.

Case 3, Mrs. F., on the third morning after confinement, presented

the usual symptoms of septic infection with a temperature of 104°.

I employ the old routine treatment of washing out the uterus with carbolic acid, and bichloride of mercury for two days, but as the patient gave every sign of progressing steadily to death, I injected the tincture of iron, repeating the treatment on the following day; prompt recovery followed.

Case 4. Mrs. D., was first seen on the sixth day after her confinement, when her condition was practically hopeless under ordinary treatment. Three treatments at intervals of twenty-four hours were sufficient to stop the septic infection and relieve all her symptoms.

The above cases appear to demonstrate that the treatment laid down is positive and unfailing in its results; in no case where the treatment was carried out was there other than a successful issue.

RETROSPECT OF CURRENT LITERATURE.

Medicine.

UNDER THE CHARGE OF JAMES STEWART.

Atypical Temperatures in Pneumonia.

JAPHA. "Ueber ungewöhnlichen Fieberverlauf bei gemeiner Pneumonie."
—*Deut. Arch. Klin. Med.* Bd. C 2, H. 1, 2.,

In this article, Japha makes use of the records of Frankel's clinic in Berlin to illustrate the comparative frequency of departures from the usual temperature curves of pneumonia. In the majority of cases this disease runs such a typical course and has such striking clinical features, that we are perhaps a little apt to forget the numerous departures from the classical type, and to overlook their significance.

A group of five cases of wandering pneumonia are first described, with intermittent temperatures, or as we should prefer to term them, pseudo-crises. In these the temperature falls to normal or subnormal, and rises again in a few hours or, at most, a day. With the fall of temperature there is sweating and marked improvement in the pulse, respiration, and subjective condition of the patient. With the return of the fever, the pulse and temperature again rise, and physical examination reveals evidence of fresh inflammation of a new area of pulmonary tissue. Several such falls of temperature followed by renewed fever and extension of pneumonic areas may occur and constitute typical examples of wandering pneumonia. The average duration of these was only eight days, not much longer than in ordinary forms of the disease.

Marked remissions in the course of pneumonic temperatures have not received any very satisfactory explanation. A series of eight cases are reported in which the charts showed several marked falls of temperature. The possibility of such falls being due to a mixed infection is discussed, but no new facts are disclosed which would tend to bear out such a theory. Malaria has often been invoked as an explanation of such aberrant types, but the absence of the plasmodium from the blood, the absence of splenic tumor, and the uselessness of quinine, are clear proofs of its

falsity. The marked character of the remissions are suggestive of streptococcus infection, but no cases are cited in support of this view. The author falls back on the fact that such cases are frequent in children, and that a difference in soil may influence the reaction to the ordinary agent in the disease, Frankel's pneumococcus.

Relapse in pneumonia is universally admitted to be a very rare condition, and in this respect contrasts strongly with typhoid. On the other hand, recurrence, rare in typhoid, is extremely common in pneumonia. Six cases of relapse are recorded by Japha. The duration of the afebrile interval between the two attacks was, 1, 3, 5, 12, 16, and 26 days. In five cases the second attack occupied the same site as the primary, and in one only were different portions of the two lungs affected in the two attacks. In the second attacks the temperature rose suddenly in four cases, in one there was a rigor, and in another herpes. The duration of the second illness varied from periods of from two to thirteen days. During the interval, signs of the primary condition disappeared completely in three cases, and in the others some of the physical signs persisted.

Ribbert points out that the usual fate of the pneumococci is to perish in the exudate; he believes, however, that in the cases under consideration, some of these organisms may escape and set up a fresh attack. Then, again, it is well recognized that the pneumococci may persist in the mouth in an active form after pneumonia, being left there by the sputum, and so form a possible source of reinfection by inhalation. In one of Japha's cases in the afebrile period there was an attack of tonsillitis which he regards as a possible origin of the second attack, or as a link between the bacteria in the mouth and the new area of activity in the lung.

Enlargement of the Heart in Chlorosis.

GAUTIER. "Ueber die morphologischen Veränderungen des Herzens bei der Chlorose auf Grund Klinischer Beobachtungen."—*Deut. Arch. Klin. Med.*, Bd. 62, p. 120.

In this article the author points out that the only morbid cardiac signs which have been closely studied in chlorosis are those observable by auscultation, whilst the morphological changes have been comparatively neglected, and many of the published results contradictory.

In a study of 23 cases observed at Ostromnoff's clinic in Moscow, evidence of enlargement of the heart was found in twenty, in some of the cases being quite considerable. The enlargement persisted during the continuance of the chlorosis, and only disappeared some time after the blood had resumed its normal character. Although all cases in which any possibility of cardiac enlargement from other causes, such as rheumatic endocarditis, were excluded, the number in which this

change occurred seems unduly large, and probably only represents the cardiac changes in the severer types of the disease.

In demonstrating cardiac enlargement the author points out that the absolute cardiac dulness, obtained by light percussion, merely indicates the borders of the lungs. For accurate results the relative area of dulness should be estimated and not infrequently this is found to be increased where the absolute dulness is of normal extent. In order to eliminate the personal equation a number of observations were made mapping out the relative normal dulness and showing that the average greatest distance of the left and right borders of the heart from the mid-sternal line is respectively 9.5 and 4.5 cm. These figures correspond fairly closely with observations of Rosenstein's and other writers. In round numbers it may be assumed that if the left border extends over 10 and the right over 5 cm. from the median line, the heart is enlarged. The writer regards cases reaching the "normal" line as suspicious, and shows that under the influence of treatment three of them receded, proving that undoubted enlargement existed. The difficulty of fixing a normal line is obviously inferred in these statements, and the difficulty of accurately mapping out a heart by deep percussion will be appreciated by all clinical observers. Towards the left, enlargement is usually more obvious and greater, and in 21 cases dulness from 1 to 8 cm. beyond the normal line was observed.

These observations certainly justify the writer's statement that an increase in the cardiac dulness is observed in the majority of cases of chlorosis. That these statements as to the size of the heart can be accepted as correct, in such a large proportion of chlorotics seems improbable, and the author himself emphasizes the fact that only severe and old-standing cases were under observation. In recent or in slight cases, evidence of cardiac enlargement is commonly absent, but in the severe cases the writer's views as to moderate and even considerable enlargements are probably correct.

Some interesting observations were made of the diminution of the heart in size under treatment. It was observed that a rapid diminution often took place in the first week or fortnight, a certain amount of enlargement, however, often persisted, and but slowly disappeared after the blood had regained its normal characters. This rapid diminution in size can only result from disappearance of dilatation, whilst the slower decrease following indicates the presence of hypertrophy. Other reasons for believing that hypertrophy is present are the full, regular pulse and the absence of any symptoms of cardiac distress such as might result from dilatation. None of the cases were kept sufficiently long under observation to note a permanent hypertrophy, a feature which has been noted by certain English authors.

A considerable amount of space is devoted to the consideration of Virchow's theory of a congenital hypoplasia of the vascular system as a cause of cardiac hypertrophy in chlorosis. The writer agrees with the opinion, now pretty generally held, that such a condition is present only in rare instances, and that it cannot be a frequent factor in inducing hypertrophy in these cases, is evidenced by the fact that the heart diminishes and usually assumes its normal size under treatment. The most probable explanation of the cardiac change is that the heart muscle shares in the weakness of other muscular structures, that dilatation results, and then hypertrophy. Palpitation is not considered as an active cause, as in most of the cases it was not a marked feature. Judging from the frequency of this symptom in chlorosis it seems, however, not improbable, that this agency may be of some importance as an accessory factor.

F. G. Finley,

Surgery.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

Treatment of Hypertrophy of the Prostate.

BRANSFORD LEWIS. *Philadelphia Medical Journal*, December 10, 1898.

ANDREW J. DOWNES. *Philadelphia Medical Journal*, December 24, 1898.

EUGENE FULLER. *Medical Record*, November 19, 1898.

In the paper referred to, Dr. Bransford Lewis describes the method of treatment of enlarged prostates by the use of the electro-incisor, a method first introduced by Professor Bottini, of Pavia, and subsequently modified by Frendenberg, of Berlin. The instrument is shaped somewhat like a lithotrite, the cautery-blade sliding in a groove in the staff, which latter is tunnelled for the passage of ice-water up and back through it for cooling purposes. In operating, the effect desired is that of a cauterizing incision, and to produce it the blade must be heated until it is of a light red colour. A cystoscopic examination of the bladder should be practised to determine, as far as possible, the conditions which obtain within the viscus, the customary rectal examination should also be made before operation. General anaesthesia is unnecessary. The parts are cocainized, by the introduction of one-half drachm or more of a four per cent. solution, into the prostatic urethra, and the vesical neck.

The instrument is introduced in the ordinary way, and once it has entered the bladder, the beak is turned directly backwards so as to hook over the projecting ring at the neck of the bladder. Once in position, the current is switched on, and the knife is slowly carried forward through the obstruction. The incision must not be made too quickly, lest the cauterizing effect be insufficient. It may be found necessary to make more than one incision, and perhaps a median and two lateral cuts will prove of most service. There is practically no hemorrhage following on the operation, and the patient is able to be about in twenty-four hours. For the first few days, the condition at the neck of the bladder may be aggravated by some oedema of the part, but this soon passes off.

Of the three cases which Dr. Lewis has operated upon, one is of such recent date, that the result cannot yet be judged. The other two cases were markedly benefitted, the amount of residual urine in one being re-

duced to two or three drachms, when at the time of the operation there was practically complete retention.

Dr. Downes' case was also satisfactory. The patient, aged 71, had been obliged to use a catheter for one year, and had developed cystitis. Even with the bladder emptied and irrigated, he could only go three hours without micturating. One ounce of a two per cent. solution of cocain was used to anæsthetize the part, a few drops being placed in the prostatic urethra and the remainder thrown into the bladder so as to bathe the prostatic surface. The solution, was withdrawn after an interval of two minutes. Three incisions were made, one in a posterior direction, one in the left lateral, and one anterior. The actual time of operating, from the introduction of the incisor to its withdrawal, was five minutes. After operation, the urine dribbled for some hours, and was then passed voluntarily, and at increasing intervals. For three days before operation the amount of urine (daily) was thirty ounces. On the tenth day after operation, it amounted to sixty ounces. The patient's general health improved *pari passu*, and he is now in excellent health.

Dr. Fuller, of New York, gives in detail the operative measures which he has pursued in these cases during a number of years. His method is to do a supra-public cystotomy, introduce a pair of serrated scissors and, having cut through the capsule, to enucleate the hypertrophied gland with his fingers. In the average cases he finds it possible to do this, but if, owing to the denseness of the growth and the firmness of its adhesions to the surrounding tissue enucleation *en masse* is found impossible, he uses Jessop's prostate scissors to cut it away piecemeal. After operation the wound is partially closed, the sutures at the upper and lower angles of the wound being made to include the bladder wall itself. By this means the organ is kept in close contact with the abdominal wall, and no extravasation into the space of Retzius can occur. He inserts two supra-public drainage tubes, and a large rubber drainage tube is also passed into the bladder through a perineal incision. This method of treatment has proved very successful in the author's hands. He has practised it on twenty-seven cases, which he divides into classes, viz:—Those with marked atheroma of the arteries, of whom there were five, and those in whom there was little, if any, arterial degeneration. Of the five patients, three died; one of cerebral apoplexy, one of post-operative hæmorrhage, and the third probably of thrombosis. Of the twenty-two cases in the second division, but two were fatal, one of suppression of urine, and one with obscure peritoneal symptoms. Some of these cases were dealt with in emergency, and most of them were suffering from the effects of vesical infection.

There can be little doubt that the procedure recommended by Dr.

Fuller is more likely to be followed by complete cure than the Bottini-Frendenberg operation. It has the great advantage of providing the free and complete drainage so necessary in these conditions, and in enabling the bladder to recover some, at least, of its lost tone. It is also suitable in cases where complete retention has occurred, when operative measures of some kind must be practised. Such cases would be entirely beyond the limits of the cauterizing operation, which is necessarily followed by more or less swelling of the tissues in the neighborhood of the incision. One would also imagine that after the lapse of some time, the development of cicatricial tissue and consequently contraction of the furrows made by the cautery would eventually lead to a condition as bad, if not worse, than that which existed before the operation. The advantages of the Bottini-Frendenberg method are its simplicity, the necessity of local anæsthesia only, and the short time during which the patient is prevented from following his occupation.

E. J. Semple.

The Use of Gloves in Surgery.

LOCKETT. *The Philadelphia Medical Journal* January 11, 1899.

In the present state of surgical asepsis, all sources of infection may be practically excluded except the skin of the patient, and the hands of the operator and his assistants. It is believed that the skin of the patient is more thoroughly disinfected, as a rule, than the operator's hands, and it is said that the skin of the patient hardly comes in contact with the wound. It has been found experimentally very difficult to render the hands, especially the fingers and the parts beneath the edge of the nails, thoroughly aseptic. It is believed that the difficulty can be, in a great measure, overcome by covering the hands with a material which can be made absolutely sterile, and which, while impermeable to bacteria, does not materially interfere with the sense of touch, the handling of instruments or ligatures, etc., or the manipulation of such delicate tissues as the peritoneum and intestines. These considerations led to the use of gloves. Halstead began the use of rubber gloves in 1889. Mikuliez introduced the use of the cheaper cotton gloves. He does not now use them in their original state, but incorporates in them some impermeable material, or employs a glove made of impermeable material. Prof. Keen becoming dissatisfied with the cotton gloves, conducted some experiments which showed that they could not be trusted. A bouillon-culture of prodigious poured into a finger of each glove passed through and was found to contain the bacillus prodigious. The results of Keen's experiment seem to prove the absolute inefficiency of cotton gloves; both in their original state and when paraffined; they fail to prevent infection from the hands. Perthes, of

Leipsic, uses rubber gloves, or silk gloves with a rubber covering. Halstead and McBurney use rubber gloves. They are sterilized by washing them with soap and water to which a little aqua ammonia has been added. They are then boiled for fifteen minutes in a 1 per cent. sodium carbonate solution, and laid in a sterilized towel until the operator or his assistants are ready to put them on. If the dry hands are rubbed with dry sterilized starch, the gloves can be drawn on with ease, even if their interior is moist. If the hand is moistened with glycerine or lubricundrin, wet gloves may be easily drawn on.

The use of gloves is probably an additional safeguard against infection. They are very useful to the accoucheur. He can always have a pair wrapped up in a sterilized towel in his bag, and thus always be ready for use.

There are two drawbacks to their general use by the general surgeon; first, they dull the invaluable sense of touch. This objection is largely gotten over by practice, and those who have persisted in their use find them after a time to lessen very little, if at all, their ability to define and separate adhesions, and to handle ligatures and instruments. The second objection is that they are liable, at any moment to be punctured by a scalpel or a needle, and through this puncture, if the hands have not been previously sterilized, infection may escape. It becomes necessary, therefore, to use every means to sterilize the hands before putting on the gloves. Then if the hands are sterile, why use gloves? If the hands are not sterile, the gloves, when used by a surgeon handling sharp and pointed instruments, give a false security. They are of great value to house-surgeons in doing their ward dressings.

Those who have adopted them are most emphatic in their praise. It also seems to be conclusively proven that if gloves are used they should be made of rubber.

Air Distension in Operations upon the Biliary Passages.

VAN HOOK. *Annals of Surgery*, February, 1899.

Dr. Van Hook distended the biliary passages by means of a sterilized bicycle pump, inserted into the apex of the gall bladder. By this means he claims that the biliary passage may be determined among adhesions, stones be more easily located, and finally the strength of the suture line determined.

G. E. Armstrong.

Pharmacology and Therapeutics.

UNDER THE CHARGE OF A. D. BLACKADER.

On the Prolongation of Nitrous Oxide Anæsthesia by Means of a Mouth Tube.

MCCARDIE. "On the prolongation of nitrous oxide anæsthesia by means of a mouth tube."—*Treatment*, September 22, 1898.

In an article published in a previous number of the *Journal*, attention was drawn to recent efforts to prolong nitrous oxide anæsthesia, by the addition of the nitrous oxide of oxygen in small quantities. Dr. McCardie, in the present paper draws attention to another method which he has found of much service in his work in Birmingham. He has slightly modified the idea of Mr. Coxan, who read a paper recently before the Society of Anæsthetists, in which he described a method of prolonging nitrous oxide anæsthesia in dental operations, by means of a mouth tube. This tube as altered by Dr. McCardie, is of strong metal about nine inches in length, 3-4 of an inch in diameter at the junction end, diminishing to a diameter of 1-2 inch for the remaining part. This tube in its last two and a half inches is curved, forming about a quarter of a circle. The method of employing it is as follows:—Nitrous oxide is given in the ordinary way to the full anæsthetic degree; then the face piece and stopcock are removed from the apparatus, and the metal tube is fixed in their place, by an assistant: meanwhile the operation is proceeding. When the patient has nearly recovered color the tube is introduced to the back of the mouth on the side most convenient to the operator, and the full stream of gas is directed into the pharynx so as to impinge on the side of its wall behind the tonsil. Anæsthesia, he claims, can in this way be maintained as long as may be necessary. The important points in practice are the following:—The tube should be fully 1-2 inch in diameter, so as to permit a sufficiently large stream of gas to escape. The gas bag should be kept fully distended throughout the administration, and may be passed between the arm and side of the body, to increase the delivery pressure. The end of the tube must be placed at the back of the throat, lying on the tongue, with the curved portion horizontal, so that the stream of gas is directed towards the side wall of the pharynx, in this way preventing blood being blown down the air passages. Nitrous oxide should be administered through the tube, until the natural colour has nearly returned to the patient's face; then such a continuous stream of the gas

should be kept up, as to maintain a moderate blueness of the lips and face throughout the operation. It is advisable that, when possible, the tube should be directed by an assistant who can also swab out the mouth, while the anæsthetist keeps full command of the head and jaws, controls the gas supply with the foot and manipulates the gag. The posture assumed has, in every administration, been the ordinary one in the dental chair. As a later improvement, Dr. McCardie has devised a small nasal clamp which closes the nostrils, and is to be fixed immediately after the removal of the face piece. He says that in those cases, in which it is practicable, digital compression of the nares has an advantage over instrumental compression, in that it gives one more command over the head, and can be applied easily at any period of the anæsthesia. He states that there is practically no limit to the prolongation of nitrous oxide anæsthesia by this method. It involves no complicated apparatus, and may, it is hoped, do away with the use of that absolutely dangerous drug in dental surgery, chloroform, and its combinations. It must be remembered, however, that as many as twenty cases of death during or immediately following the administration of nitrous oxide have been recorded; and if the anæsthesia be prolonged beyond the ordinary time, the risks are proportionately increased. These are the greater liability to shock, to syncope from fall of blood pressure, and to the increased chances of blood or foreign bodies finding their way into the larynx. It is not, in the writer's opinion advisable to use this method, or indeed to prolong nitrous oxide anæsthesia at all in old people, especially those with diseased arteries or fatty hearts; in the very weak; in cases where marked pulmonary disease exists; or in young children, though the latter for operations elsewhere than in the mouth, will take gas very well, indeed, if mixed with oxygen. The disadvantage of the method is that it needs some practice, on the part of the anæsthetist, and his assistant, if one be present, to successfully keep the tube out of the way of the operator. Dr. McCardie does not think that for long or severe operations this method of inducing anæsthesia should replace the combination of nitrous oxide, and ether, inhaled from a Hewitt's apparatus, but he considers it to hold a place midway between the ordinary gas inhalation on the one hand, and the use of gas followed by ether, on the other. It must be remembered that whenever prolonged anæsthesia by nitrous oxide is to be induced, every precaution should be taken against the additional dangers involved.

At the close of the paper, Dr. McCardie records the details of seven cases in which anæsthesia was prolonged for periods varying from two minutes and thirty seconds, to nine minutes and fifty-five seconds. Recovery from prolonged anæsthesia induced in this way is extremely

rapid, and not marked by any untoward symptom. The quantity of nitrous oxide required may be calculated as eight gallons, for the induction of full narcosis; and eight gallons for every additional half minute anesthesia is prolonged.

On the Treatment of Prurigo by Calcium Chloride.

In a very interesting article on the treatment of prurigo, Dr. Saville (Treatment, December 22, 1898), refers to the many remedies which have from time to time been employed for the relief of the intolerable discomfort due to this disease. Local treatment, he thinks to be frequently of service; a creolin bath in the proportion of one drachm to ten gallons of water, or an alkaline bath containing sodium bicarbonate, eight ounces, and water at 90° F., thirty gallons often afford much relief; plain water, sometimes, soothes, but not infrequently aggravates the condition. Ointments and lotions are practically of little use owing to the wide distribution of the trouble. Among the most serviceable may be mentioned lead, or zinc lotion, or preparations containing zinc oxide or bismuth suspended in lime water. Hydrocyanic acid has a local sedative action, and may be employed in weak solutions not stronger than one drachm to four ounces. A lotion of equal parts of solution of ammonium acetate, methylated spirits, and rose water forms a pleasant and soothing application. All these measures, however, are only palliative, and recourse, must generally be had to constitutional remedies. Among the more useful of these he mentions carbolic acid internally in doses of 1-2 grain; tincture of gelsemium in 20 minim doses thrice daily; (such doses must be used with caution as untoward effects may supervene), chloral hydrate in doses of 10 or 15 grains, given thrice a day, but its narcotic properties in these doses interfere with its usefulness, and if long continued, a dangerous habit may be induced; pilocarpin in doses from 1-20 to 1-10 grain, two or three times a day, by promoting perspiration is often very valuable; the bromides, in cases attended with marked neurotic symptoms are useful; but in ordinary cases beyond inducing sleep and thus helping the patient to cease scratching, they are generally of little avail. In 1896, in an article published in the *Lancet*, Dr. Wright, of Netley, drew attention to the favourable results frequently attending the administration of calcium chloride in this very troublesome affection. Since then, many observers have tried and confirmed the efficacy of this drug, in relieving not only cases of general pruritis and prurigo, but in the itching which accompanies many forms of skin eruption. Dr. Saville gives the details of several cases in which its administration proved of the greatest service. Full doses are demanded; not less than 20 grains, three times a day, and, if necessary, the amount should be gradually increased: doses of thirty or forty grains have often succeeded, after a smaller amount

had failed. The drug should be administered after meals in a wineglassful of water; thus given it produces little gastric disturbance. Patients sometimes complain that it makes them thirsty; to cover the salt taste, the remedy may be given in chloroform water, with the addition of a little tincture of orange peel. Dr. Saville does not think it is so efficacious in the lichen urticatus of childhood, as in adult and senile cases; but he thinks it possible that he has not given the remedy in sufficiently large doses. Dyspepsia if present, must be treated upon general principles. In all cases it is well to avoid sweet foods, and allow butchers' meats only in small quantity. Perserverance may sometimes be required. Dr. Saville states that he has often succeeded in obtaining a cure by persevering with the remedy for three to six weeks, although no improvement was observed during the first two weeks. When recovery has taken place, the dose should only gradually be reduced. In proportion to the inveteracy of the case, larger doses are required and longer perseverance. In Dr. Saville's experience the drug appears to act more promptly in those cases which are attended by erythematous blotches. He emphasises the importance in all cases of paying careful attention to the alimentary tract, but adds that we must abjure a narrow specialism which confines its attention either to the skin, the alimentary canal, or the nervous system; the affection ought to be regarded as a product, not of a single cause, but of a multiplicity of factors, by the neglect of any of which we may fall into error and fail to relieve suffering.

Ophthalmology.

UNDER THE CHARGE OF J. W. STIRLING.

Ophthalmoscopic Evidence of General Arterial Disease.

R. MARCUS GUNN. "Ophthalmoscopic evidence of general arterial disease."—*Transactions of Oph. Society of the U. K.*, 1898.

This valuable paper of Mr. Gunn's, read before the Ophthalmological Society, called forth quite an animated discussion, and certainly is of much value, and worthy of the high encomiums passed on it.

Mr. Gunn describes certain ophthalmoscopic changes due to an affection of the retinal arteries, and which he holds are indicative of similar changes in the general arterial system, deducing numerous case reports in support of this.

The changes noted in the eye are, an irregularity in the breadth of the arteries, they being contracted at one part, and dilated further on. The arteries are also very tortuous, their light reflex is narrow, and exceptionally bright, especially in the secondary and tertiary branches, they also lose in transparency so that where they cross a vein, the underlying vein can not be seen through them, the opposite condition holding, when the vein crosses over the artery. Of most importance, however, is the fact that where the diseased artery crosses a vein, it impedes the venous flow. There is also often a slight œdema of the retina, and sometimes hæmorrhages.

The explanation of these symptoms is an altered condition of the coats of the arteries, an arterio-sclerosis, with the accompanying rigidity. The result of the impeded circulation, is diapedesis, and hæmorrhages.

Old age favours these changes, but certainly alone does not produce them. The gouty diathesis and chronic alcoholism are strong etiological factors.

Glaucoma, thrombosis, embolism, cataract and Tay's choroiditis are prone to occur in these vascular conditions, but the point of greatest clinical significance is the association with more general arterial disease especially in the brain and kidneys.

Mr. Gunn closes his paper with the citation of many cases in which the relation of the above mentioned ocular arterial lesions with later developing cerebral vascular changes, is almost startling, and which certainly impress one with the importance of the early discovery of vascular lesions in the eye, and of their prognostic import.

Sympathetic Ophthalmia.

ALFRED MOLL. "Experimental bacteriological investigations in sympathetic ophthalmia."—*Centralblatt für Augenheilkund*, December, 1898.

Considering Deutschmann's theory of the migration of bacteria along the optic nerve from the exciting to the sympathising eye, as pretty well exploded, Moll has conducted a series of elaborate experiments on rabbits.

As the result of the work done, he draws the following inferences:—In animals, which have had inoculated into the general circulation a well marked characteristic bacillus (pyocyaneus in Moll's cases), the irritation of one eye is followed by appearance of the bacillus in the aqueous of both this eye and the other one; in the control experiments, however, the aqueous humor is sterile, in animals whose eyes have not been subjected to irritation or injury. These results support the neurotic theory of the origin of the sympathetic ophthalmia as modified by Schmidt, Runpler, and others. According to this theory, the injury in the exciting eye, occasions a disposition to sympathetic inflammation in the second or sympathising eye, which sympathetic inflammation only occurs if a chemical or bacterial poison be present in the blood.

Disturbance of Vision from the Electric Current.

DR. KRETSCHMER, Liegnitz. "Disturbance of vision from the electric current."—*Centralblatt für prakt Augenheilkund*, December, 1898.

Kretschmer, reports the very interesting case of a man aged 50, who was struck by the falling wire of a trolley car. After a short period of unconsciousness and irritative phenomena in the affected parts, motor and sensory paralysis of the right side of the body and left half of the face rapidly developed, there was complete deafness of the left ear, and blindness of the left eye, and also obliteration of the inner half of the right field of vision, and amblyopia in the outer half. The only changes visible in the fundi of the eyes was venous congestion and blurred edges of the disc. Gradually, with occasional attacks of twitching, the paralysis of the arm, and later of the leg, improved, but the blindness and deafness remained unchanged. In the outer half of the right field of vision the vision improved somewhat. The fundi assumed a normal appearance, and the pupils were active to light and accommodation.

The current had a strength of 500 volts at its origin, but must have been considerably weaker at the point where the break occurred.

Connection of Eye Affections with Other Diseases.

SCHMIDT-RIMPLER. Connection of eye affections with other diseases."—*XXI Band des speciellen Pathologie v Therapie*, Wien, 1898.

WOLFFBERG. "Vascular retinitis from tooth affections."—*Wochenschrift für Therapie und Hygiene des Auges*. No. 14. 1898.

HILBERT. "Interstitial keratitis following influenza."—*Die Ophthalmologische Klinik*. No. 4. 1898.

HILBERT. "Coloured vision resulting from influenza."—*Lehender's Klin. Monatsblätter*, April, 1898.

DESVAUX. "The role of general disease in the etiology of diffuse keratitis."—*Archives of Ophthalmologie*, January, 1898.

SAEMISCH. "Scabies of the cornea."—*Lehender's Klin. Monatsblätter*, December, 1898.

DIANOUX. "Ocular troubles in diabetes."—*Annales d'Oculistique*. October, 1898.

Schmidt Rimpler's work forms part of the elaborate system of special pathology, and therapy brought out by Nothnagel, of Vienna.

It obtains special importance on account of the many observations and cases noted by Schmidt Rimpler himself. It is all of value, but special note must be made of the eye changes observed in diabetes, for these embrace those seen in one hundred and fifty cases collected by the author.

Cataract was the most frequently noted change, being observed in sixty-eight cases, then follow affections of the optic nerve, in thirty-seven, retinal disease in thirty-four—after this follows a big drop to fifteen cases of amblyopia, ten of paresis of the external ocular muscles, eight of accommodation disturbances, seven of iritis, and choroiditis and five of vitreous opacities.

In this connection we may refer to Dianoux's paper. He considers cataract as the most common ocular complication of diabetes. The soft cataract develops in young people in the acute or pancreatic form of diabetes and rapidly matures. In the chronic diabetes of adults Dianoux doubts if cataract is more common than in non-diabetics. The operation for senile cataract in diabetics may be quite successful, but in the soft form of cataract the operation is often followed in seven or eight days by pulmonary apoplexy or death, at any rate, the patient generally dies in a year or fifteen months.

Dianoux, speaking of retinal hæmorrhages, says they are found nearly always in old people—they may absorb—not being found in young diabetics, he doubts if the hæmorrhages are directly due to diabetes, but thinks they are rather due to arterio-sclerosis. The prognosis is, however, bad, as death may occur at any time from cerebral softening. Central scotoma, also, are seen, but differ from the tobacco and alcoholic in that they never disappear.

Wolffberg's case was that of a woman, aged 26, who suffered from the following visual disturbances, which were improved or cured by the removal of a carious tooth. The symptoms were distorted letters, accommodative weakness, slow pupillary reaction, increased tension of the eyeball, medium mydriasis and very marked hyperæmia of the macula lutea.

Hilbert's case of interstitial keratitis occurred two and a half weeks after the outbreak of the influenza, and healed without leaving any trace behind.

The case of coloured vision was that of a man, aged 30, who previously had perfectly normal eyes, but after an attack of influenza saw all objects as blue, accompanied by attacks of vertigo, which disappeared in fourteen days after using Bland's pills. In another case there was yellow vision.

Desdauz argues against hereditary syphilis being so frequently accepted as the cause of interstitial keratitis, because 30 to 50 per cent. of the cases are due to other causes, namely tuberculosis, and after this, influenza, rheumatism, gout, uterine affection, childbed, and rickets.

Saemisch's rare case of scabies of the cornea can scarcely be considered in this connection, seeing that scabies could be discovered nowhere else in the patient's body. The patient was a youth of 18, on whose left cornea a central dense infiltration was found with a leash of vessels running from the periphery of the cornea to it. On scraping it out, and examining the material microscopically a female *Sarcoptes Scabiei*, was discovered, with numbers of eggs, in her neighborhood in various stages of development.

Ocular Therapeutics.

WOLFFBERG. "Ichthyol and ichthaibus in ocular therapeutics."—*Wochenschrift für Therapie des Auges*, 18.

CHETWOOD-AIKEN. Bromo-hydrate of arecoline as a myotic."—*British Medical Journal*, January 14, 1888.

MESSNE. "Some results with protargol in eye disease."—*Centralblatt f. Augenheilkunde*, January, 1899.

Wolffberg, considering that ichthyol acts as a contracting agent on dilated blood vessels in all parts of the body has been prescribing ichthalbin internally in glaucoma, and iritis, in addition to the local treatment, and with very good results. He also mentions a case of retrobulbar hæmorrhage which underwent resorption with surprising rapidity under this treatment.

Chetwood-Aiken highly praises the bromohydrate of arecoline in a one-half per cent. solution, as a rapid myotic. It produces a slight tingling on being instilled into the eye, lasting a few moments, but without

any conjunctival or ciliary congestion. Myopia begins in two or three minutes, and reaches its maximum in twelve minutes, and lasts half an hour, and disappears in an hour and a half. There is spasm of the ciliary muscle. The tension of the eye is but slightly decreased. There is no headache as with *elsevin*, the action is more rapid and powerful, and shorter than that of *esevin*.

It is stable in solution and keeps for a long time unchanged, overcomes the dilation of *homatropin* rapidly, and is cheap.

Articles descriptive of *protargol* and its effects are rapidly appearing, and they are on the whole laudatory in tone. The sum of them is that *protargol* finds its chief sphere of usefulness in acute inflammation of the mucous membranes, especially those in which there is fairly free muco-purulent secretion. It is used in a strength of 2 per cent. to 10 per cent., but mostly 5 per cent. Watery solution, dropped into the eye or brushed on the lids.

J. W. Stirling.

Society Proceedings.

MONTREAL MEDICO-CHURURGICAL SOCIETY.

Stated Meeting, February 6th, 1899.

Dr. J. Helen Macdonald, of Montreal, was elected an Ordinary Member.

Brain Physiology.

Dr. WESLEY MILLS gave some demonstrations on Brain Physiology in continuation of others put before the Society within the past three years. Previous ones had been on frogs and on mammals, those given on this occasion on pigeons. First were shown the brain of a normal pigeon intact, and in comparison with this a brain with practically the whole of the cerebrum removed. The bird during life was able to sit up, balance, swallow, fly, etc., but was constantly in a soporose condition, from which it could, however, be aroused. It had lived for six days. Next were shown two living pigeons. From one of these there had been removed, three days previously, the posterior two thirds of the cerebrum. This bird was not in the least drowsy, but in most respects was like a normal pigeon. It speedily recovered from the operation. It could walk, fly, balance on a perch, see, hear, feel, etc. It pecked like a recently born chick, at spots on paper, but so far had not actually fed spontaneously. It also frequently preened its feathers in an elaborate fashion. Very similar in general was a bird, from which, at least two thirds of the cerebrum had been removed by a horizontal incision. The bird had been the subject of operation more than two months since. For some days it was rather dull. At first it had also pecked at food, but never had actually taken it up, and swallowed it. The bird after a certain time began to lose weight. It was therefore fed more frequently and given cod liver oil with maltine. It soon regained all the weight lost, and was now a vigorous pigeon, apparently normal in all respects except that it did not eat, recognize other pigeons as such, etc. It cooed, preened its feathers, looking about as if taking a natural interest in its surroundings, and made short flights.

The question arose as to the degree to which any features in its behaviour were the result of the exercise of will-power, or intelligence proper.

Views on the nature of the intelligence, especially its development, and of the will, are now changing rapidly, and it was hoped that the study of birds thus operated on, taken in connection with other animals that had been deprived of a greater or less portion of the cerebrum

would throw light on such psychological problems as well as others of a purely physiological character, and on the correlation of the physiological and the psychological.

Some Interesting Eye Conditions.

Dr. BULLER read the following histories, and Dr. BYERS exhibited the specimens:—

Irido Cyclitis Traumatica—J. K., aet. 3 years, was struck in the right eye in July, 1898, with a piece of wood and received treatment from a general practitioner. He was brought to the Hospital on October 18th, 1898, to see if there was any damage to the other eye. The following condition was present:—The right eye was shrunken, slightly injected, and easily irritated, with a large transverse cicatrix through the shrunken cornea extending from the anterior margin nearly to the opposite side, and with very extensive inclusion of the iris. There was no plus tension. The condition of the injured eye was typical of the much dreaded plastic irido-cyclitis, which in children seems to have a specially malignant tendency towards the other eye, and obviously demanded enucleation. The case was one in which I should probably have performed Mules operation in preference to enucleation, had I seen it before the eye became shrunken.

Sarcoma of the Choroid—This occurred in an old man with the usual sequence of events, detachment of the retina, blindness, glaucoma, with intense pain, came on some months after the detachment had occurred. The eye was enucleated in April last, and the patient was last seen about a month ago, and was quite well. He will probably succumb to a recurrence of the disease in the liver within three years from the date of the operation.

Sarcoma of the Choroid — This case is remarkable for the comparatively youthful age of the patient, who was only 31 years old. When first seen in October there was a very large detachment of the retina of unusually opaque appearance. Early in December the eye became glaucomatous and intensely painful. The diagnosis of tumour was based chiefly on the sequence of events.

Foreign Body in the Vitreous. The patient came with a history of injury 23 years previously and the eye was found in a condition of chronic irido-cyclitis and quite blind. Enucleation was performed to relieve the pain and guard against probable sympathetic ophthalmia. This case illustrates the general rule that a foreign body remaining in an eye sooner or later destroys it.

Glioma of the Retina—The eye was removed in August, 1895, and the patient is still living and in excellent health. The eyeball was, as seen, half filled at least with the growth. Its non-recurrence is a most gratifying fact as most of these cases recur locally and generally, and

terminate fatally. No particular precautions were taken to prevent recurrence.

Chronic Irido Cyclitis, with Glaucoma, Ciliary Staphyloma, etc., in an old man. Thirty years ago he ran a needle into the eye and after the resulting inflammation had quieted down, he could distinguish between light and dark for ten years. Then the eye became blind and has been irritable off and on ever since. The total loss of vision and frequent attacks of pain and irritation in a hopelessly degenerated eye as occur in every case of so-called glaucoma consummation, were ample reason for enucleation of the eyeball. The patient has enjoyed perfect comfort ever since.

Strangulated Femoral Hernia.

Dr. A. E. GARROW read the report of the case, and Dr. NICHOLLS exhibited the specimens. (It will be published later.)

Dr. JAMES BELL did not think that Dr. Nicholls had put the cause of death fairly. It should not be attributed to the operation, but to the obstructed condition of the bowel.

Dr. F. R. ENGLAND asked if the second operation had been done for the relief of the symptoms only. He thought that it would have been wiser to have gone a little farther and found the obstructed point.

Dr. LAPHORN SMITH asked if the frequency of pneumonia in these cases could be attributed to the drawing of vomited matter into the lungs, or if the infection took place through the circulation.

Dr. J. M. ELDER said that the patients do not die if the obstruction is temporary, but if the strangulation has existed for more than twelve hours the patient rarely gets well. He said that Dr. Wyatt Johnston has been following up very closely several cases that have died in the General Hospital, and has found that there was a septic phlebitis in every case. He has traced the infection, not through the omental veins, but through the mesenteric veins. A few hours will produce sufficient poison to cause the death of the patient. He asked if the secondary obstruction had occurred in the knuckle of bowel that had been originally strangulated.

Dr. GARROW, in reply to Dr. England, said that during the week there had been two distinct histories of obstruction. The condition became rapidly bad, and was too grave to permit of a search for the obstructed knuckle. The only chance that remained was to give temporary relief to the distended bowel, and endeavour to build up the patient, and at a subsequent time to do the more serious operation.

Dr. NICHOLLS, in reply, said that the obstruction occurred in the portion originally strangulated, the walls were distinctly necrotic. In reply to Dr. Smith he said that he had never met with a case of pneumonia which he could attribute to fæcal inhalations. In this case

there were absolutely no sign of such a thing. The infection took place through the circulation.

Stereoskiagraphy.

Dr. G. P. GIRDWOOD read a paper on this subject. (See page 193.)

Dr. WESLEY MILLS thought a person might have stereoscopic vision yet not be able to see stereoscopically. It is a matter of special experience. Seeing is a psychological rather than a physiological action. He certainly could not see some of the pictures as Dr. Girdwood saw them.

Empyema of the Accessory Cavities of the Nose.

Dr. R. H. CRAIG read a paper on this subject. (To be published in April.)

ASSOCIATION OF AMERICAN ANATOMISTS.

ELEVENTH ANNUAL SESSION.

The eleventh annual session was held in New York City, December 28-30, in conjunction with the "Naturalists" and other affiliated societies. Most of the meetings were held at the Medical Department of Columbia University. Forty-one members attended and twenty new members joined, making a total membership of one hundred and forty-one, of whom ten are honorary. The localities and names of the new members are as follows:—From Ann Arbor, Prof. J. P. McMurrich, University of Michigan; from Baltimore, Professors F. P. Mall and L. F. Barker, and associate R. G. Harrison, of the Johns Hopkins University; from Buffalo, Dr. N. S. Russell, assistant in anatomy, University of Buffalo; from Ithaca, Dr. L. Coville, lecturer and demonstrator in anatomy, Cornell University Medical College; from Montreal, Dr. J. G. MacCarthy, senior demonstrator of anatomy, McGill University; from New York City, Prof. J. D. Erdmann, of Bellevue Medical College; Dr. Evelyn Garrigues, assistant demonstrator of anatomy, Woman's Medical College; Dr. Ales Hedlicka, associate in anthropology, Pathological Institute of New York Hospitals; and the following assistant demonstrators of anatomy in Columbia University:—Doctors G. E. Brewer, C. Carmalt, H. D. Collins, G. W. Craig, W. Martin, W. H. Rockwell, and A. S. Vosburgh; from Philadelphia, Prof. J. C. Heisler, of the Medico-Chirurgical College; from Savannah, Dr. E. R. Corson; from Washington, D.C., Dr. C. I. West, demonstrator and lecturer in topographical anatomy, Howard University.

The address of the president, Dr. Burt G. Wilder, discussed "Misapprehensions as to the Simplified Nomenclature;" the speaker urged especially a fuller recognition of what had been done by the English anatomists, Barclay, Owen, Pye-Smith and T. Jeffery Parker, and hoped the nomenclature of the future would be called the "Anglo-American."

The Association voted that abstracts of papers be required in advance, and that brief abstracts be included in the programme; that the time for reading papers be limited to thirty minutes; that the secretary-treasurer be allowed his railroad fare and ten dollars toward his hotel expenses at each meeting. The association also accepted the propositions of the editors of the (English) *Journal of Anatomy and Physiology* as to making that journal the official organ of the Association, and nominated Prof. George S. Huntington as the American editor. The details of the arrangement will be given in a circular to be issued by the secretary of the Association. Dr. E. W. Holmes, of Philadelphia, was

elected member of the Executive Committee, and the president was authorized to fill the vacancy in the Committee on Anatomical Nomenclature caused by the resignation of Dr. Dwight.*

The subject assigned for discussion, "The teaching of Anatomy in our Medical Schools," was opened by Dr. Holmes, "The defects of our present methods," and further considered under ten divisions, viz:— 1. Preparatory Education; 2. The value and place of General Biology and Comparative Anatomy; 3. Histology and Embryology in the medical course; 4. The relative value of didactic methods; 5. Practical anatomy and how to teach it; 6. The order of topics; 7. The correlation of structure and function in teaching; 8. The use of charts and blackboards; 9. The qualifications requisite for a teacher of anatomy; 10. The desirability of terminologic consistency; by Dr. Gerrish (4, 6 and 8), by Dr. Huntington, (2, 3, 5 and 6), and Dr. Wilder (10). In view of the extent and importance of the subject it was suggested that at future meetings a smaller number of divisions be more fully considered.

The following papers were read and discussed, all were illustrated by specimens, and charts or photographs, and several by lantern-slides or enlarged photographic projections: By J. A. Blake, "The roof and lateral recesses of the fourth ventricle considered morphologically and embryologically;" by G. E. Brewer, "Preliminary report on the surgical relations of the duodenal orifice of the common bile-duct;" by E. R. Corson, "An X-ray study of the normal movements of the carpal bones and wrist;" by F. Dexter, "Morphology of the digestive tract of the cat;" by T. Dwight, "The origin of numerical variations of the vertebrae," and "The living model showing the platysma in contraction," by S. H. Gage, "Further notes on the relation of the ureters and great veins;" by I. S. Haynes, "An explanation of a new method of cutting cross sections of the cadaver, with demonstration of the technique;" by Ales Hedlicka, "The normal human tibia;" by G. S. Huntington, "Morphology and phylogeny of the vertebrate ileocolic junction;" "Visceral and vascular variations in human anatomy;" and "The sternalis muscle;" by W. Martin, "The cæcum and appendix in 100 subjects;" by J. J. MacCarthy, "The internal structure of the hippocampus;" by B. B. Stroud, "Note on the staining of isolated nerve-cells," and "Preliminary account of the degenerations in the central nervous system of frogs deprived of the cerebrum;" by B. G. Wilder, "Some current misapprehensions as to the objects of the Cornell collection of brains." For lack of time there were read by title only, Dr. Wilder's paper, "Further tabulation and interpretation of the paroccipital fissure (occipital division of the intraparietal complex," three papers by Dr. Huntington,

* Dr. E. C. Spitzka, of New York City, has since been selected.

"The genito-urinary system of the American pit-viper;" Contribution to the anatomy of the reptilian vascular system;" "Cerebral fissures and visceral anatomy of the Eskimo from Smith's Sound," and Dr. Haynes' discussion of teaching.

At its closing session, December 30, the Association adopted without dissent the report of the Committee on Anatomical Nomenclature presented by the majority (Gerrish, Huntington, and Wilder.) It comprises four divisions, viz.:—

A. Brief statement of reasons for preferring certain terms (about fifty in number), already adopted by the Association.

B. Recommendation of mesocœlia as a name for the cavity of the mesencephalon, with reasons therefor.

C. Recommendation of 181 names, of bones (120), and muscles (61), identical with those in the B. N. A. (Ba.)

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No. 3.

PRIVATE WARDS IN PUBLIC HOSPITALS A CAUSE OF HOSPITAL ABUSE.

Our correspondent, Dr. Bell, with his usual courtesy, characterizes our contention, that the existence of private wards in public hospitals is a cause of hospital abuse, as extraordinary and illogical, but is careful not to attempt to refute any of the arguments put forward. His letter deals with other aspects of the question. The charge of fifty cents a day to patients from the city who can afford to pay, and to all patients from outside the city who enter the public wards, is objectionable; and our correspondent states some of the objections very clearly. Our correspondent's idea, that to the public wards should be admitted not only the poor who cannot pay anything, but also those who can afford to pay \$1.25 per day, we will not characterize as "extraordinary and illogical" but as impracticable.

We must face the question of hospital abuse fairly and squarely. There are many reasons to account for the wonderful proportions that it has assumed during the past decade and these must all be carefully studied and considered. One of the reasons seems to us to be the existence of private wards in public hospitals, and one of the remedies to be the diffusion of the idea that public hospitals are for the poor and private hospitals for the well-to-do. Our contention is that the class of patients who occupy private wards popularize hospital treatment. By example as well as by treatment they teach, that in many instances there are advantages to be obtained in hospitals that cannot be obtained in private houses. Others, learning this, try to obtain these advantages at the least possible cost. We contend that public hospitals, supported by subscriptions from the charitable public, are for the poor and should be maintained for the poor, and that private enterprise can be trusted to provide, for those able to pay, quite as good facilities for the treatment of medical and surgical diseases as are provided for the poor by public benefaction. Public benefactors provide a very comfortable House of Refuge for the

poor and the old and destitute, but the Windsor Hotel provides a better room and a better table for those who can afford to pay for them. Private enterprise will also provide thoroughly equipped private hospitals for the well-to-do as soon as it can be done without financial loss, but it cannot be done while the public wards of our hospitals contain as many patients, who are able to pay for their treatment, as at present.

HOSPITAL ABUSE.

The movement set on foot by the Montreal Medico-Chirurgical Society looking towards a lessening of hospital abuse is taking definite shape. A meeting of the representatives of the Montreal General, Notre-Dame, Royal Victoria, and Western Hospitals, together with representatives of the Montreal Medico-Chirurgical Society, and of the Profession, was held in the rooms of the General Manager of the Molson's Bank, on Thursday the 16th of February. All present were unanimous in the opinion that something should be done to lessen this growing evil and that the present time was opportune. It is to be regretted that the authorities of the Hotel-Dieu Hospital have declined to take part in this work.

Now that steps are to be taken to do away, as far as possible, with hospital abuse, the result largely of agitation by the members of our own profession not connected with hospitals, it becomes of the utmost importance, that the physicians throughout the city and country do their part loyally. The matter is really largely in our own hands. Hospital physicians and surgeons are often charged with encouraging this abuse. A moment's reflection, however, will show that medical boards have every thing to loose and nothing to gain by the admission to the public wards of patients able to pay for medical service. Medical boards are largely dependent upon the members of the profession who recommend patients to the hospital, and who are supposed to know whether or not those recommended are poor and unable to pay medical fees. It follows that medical men must be loyal in their recommendations, and not give letters of recommendation to the public wards of the hospitals to those who are not properly entitled to them. If we only stand together, much good can be accomplished and that very soon.

Obituary

SIR JOHN STRUTHERS, M. D., L. L. D.

It is with great regret that we have to record the death of Sir John Struthers. Professor Struthers was well known to all students of anatomy by the original work he had done in that subject. He was essentially a modern anatomist, one who accepted completely the principles of evolution as expounded by Darwin and others, and who added much to our knowledge of comparative and morphological anatomy. He was well known as an authority on the anatomy of the Cetacea, and his specimens of the rudimentary hind limbs of whales adorn many of the anatomical museums of Great Britain.

Sir John Struthers, in 1884, came out to Canada with the meeting of the British Association for the Advancement of Science, and met at that time many of the medical men of Canada. His genial manner, his genuineness and earnestness, his love for the subject (anatomy) he was most identified with, impressed all. At the same time he took a great interest in Canada as a country and was much interested in her great possibilities. He was eager to learn all about her medical schools, most of which he visited for the purpose of reporting unofficially their condition to the Medical Council of Great Britain and Ireland of which he was a member. His speech at the great dinner of the Canadian Medical Association, held at the Windsor during the meeting of the British Association, will long be remembered by those who heard it. It was not the least remarkable of the great speeches made on that occasion by our visiting brethern of the British Science Association. Although comparatively an old man when he died, (seventy-six) yet up to the very last he was deeply interested in medical education and hospital reform. He was always in the van and in Edinburgh, where he latterly resided, he was one of the most active reformers on the Board of the Royal Infirmary.

Sir John Struthers was the very best type of a Scotchman, he was determined, cautious, exact, rigid in his conduct and gifted with a strong personality, but beneath all this he had a great fund of human sympathy, and anyone who knew him well could appreciate the kindness of his heart. To his friends, he was always the same, steadfast, loyal, and willing to champion their cause. Those opposed to his views had a very vigorous adversary.

Sir John was born about 1823 and graduated M. D. at Edinburgh University. He was formerly one of the Surgeons of the old Royal In-

firmly. He taught anatomy at the Surgeons Hall, Edinburgh, and Professor Rutherford, who has just died, was one of his demonstrators. On the death of Goodsir, he gave the lectures on anatomy in the University for one session and was a candidate for the chair but failed to get it by a small vote, the successful candidate being Mr., (now Sir William) Turner. In 1863, he was appointed Regius Professor of Anatomy to the University of Aberdeen, from which appointment he retired as Emeritus Professor in 1889. Since his retirement he resided in Edinburgh where he took such an interest in medical affairs, that he was elected President of the Royal College of Surgeons and as such received the honour of knighthood in January 1898. He was one of the few remaining links of the days of Knex and Goodsir, Syme, Simpson, Miller, Christison, Hughes Bennett, and others of the noted medical worthies who adorned Edinburgh fifty years ago and added lustre to its Medical School.

GESTA MEDICORUM.

"QUICQUID AGUNT MEDICI NOSTRI FARRAGO LIBELLI."

Dr. Röntgen, of Wurzburg, who was recently called to a chair in Leipzig, has declined the offer.

After much debate it was decided to admit women-physicians into the Medical Society of Buda-Pesth.

At the May meeting of the Chicago Society of Internal Medicine, Dr. Adami, has been invited to read a paper.

A new monthly journal has appeared in New York. It is called the "Medical Advertiser," and is edited by Dr. F. T. Hopkins.

Dr. Edwin G. Wood, gold-medallist at McGill, in the class of '85, has been appointed professor of Practice of Medicine and Clinical Medicine at the University of Nashville, Tenn.

Dr. Fred. Wainwright who was for a year interne at the Montreal General Hospital, has recently taken the diploma of L.R.C.P., and M.R.C.S., after four months study in London.

A Chinese Medical Journal, entitled "A Monthly Journal of Medicine, Surgery, and Hygiene," has appeared. It is edited by Wan Tun Mo, a graduate of the Imperial College, at Tientsin.

We regret, that owing to the continued illness of his wife, Professor Adami, will be unable for the next few months to prosecute his work at the university. He has the best wishes of all for a speedy return.

A committee has been appointed in the Medical Department of the University of Pennsylvania, to collect \$300,000, which is to be devoted to erecting Pharmacological, Physiological, and Pathological Laboratories.

In the recent prize competition held by the Philadelphia Medical Journal, Dr. Thomas Snyder, of Queen's University, Kingston, received the second prize of \$50.00, in the section of Gynecology and Obstetrics, for his essay on Eclampsia.

Dr. H. K. Wright, who has lately been demonstrating in Nervous Pathology at Cambridge, has been appointed recently assistant pathologist to one of the county Asylums, where he intends to continue his studies on the pathology of the nervous system.

Smallpox is such an uncommon disease in Canada that a few sporadic cases in Ontario and Quebec, for a time, gave rise to some disquiet. The disease was first heard of at Coteau, and then various centres appeared in the neighborhood of Smith's Falls, and St. Andrew's, Que.

It is reported that all the cases in Quebec are now well, and no new ones have appeared. In Ontario vigorous measures were inaugurated and the disease is now abating.

The Jenner Institute of Preventive Medicine, has lately established itself in its new building on the Chelsea Embankment.

This institution has recently received from Lord Iveagh the sum of £250,000 for the purpose of establishing research scholarships.

Dr. W. G. Reilly has been appointed Medical Registrar of the Royal Victoria Hospital, in the room of Dr. H. K. Wright, who has spent the last year in special study in England and Germany, and has been recently appointed assistant in Neuro-Pathology, in a large Hospital for the Insane, in England.

The College of Physicians and Surgeons of the Yukon Territory, Canada, was recently organized by the election of the following officers: President, Dr. E. D. Dunn; vice-president, Dr. R. R. Macfarlane; registrar, Dr. A. F. Edwards. These with Drs. J. W. Good and H. H. Hurdman constitute the council. Bona-fide practitioners of medicine are eligible to membership upon presenting proper credentials, passing an examination, and the payment of \$100.

It is gratifying to see some attempt at progress in civic health matters in Montreal. For years the Morgue has been a disgrace to a civilized community. The authorities, we understand, are looking at a property on Rachel street, with a view to leasing it. The city should own its own Morgue, as it should be thoroughly up to date. The Civic Contagious Diseases Hospital has also been condemned, and will have to be vacated. The result is yet to be seen.

It is deplorable that there is no place in the city to which infectious diseases other than Diphtheria and Scarlatina can be sent. Every physician, in active practice, knows how difficult it is to deal with measles, for instance, when it is often desirable to remove the patient. And it was

only the other day that a man died of erysipelas, having been refused admission to several of the city hospitals.

Such things should not be.

“INTERNATIONAL CLINICS.”

J. B. Lippincott & Co., Philadelphia, in the Ninth Annual Announcement of this well known quarterly, give notice that the price with and after the April, 1899, issue will be for cloth binding, \$2.25, and half leather, \$2.50, per volume, the annual subscription being thereby reduced from \$12.00, and \$13.00, for the respective bindings, to \$9.00 and \$10.00. New or renewal subscribers in Canada may address their orders to:—Charles Roberts, 593a Cadieux Street, Montreal.

THE MONTREAL MEDICAL JOURNAL.

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No. 4.

Original Communications.

YESTERDAY AND TO-DAY.

AN ADDRESS TO THE UNDERGRADUATES' MEDICAL SOCIETY, JUNE, 1898.

BY

FRANCIS J. SHEPHERD, M.D.,

Professor of Anatomy, McGill University ; Senior Surgeon to the Montreal General Hospital.

I have thought for some time about various subjects on which to address you this evening : some dry and heavy, others light and airy ; and I concluded, after due consideration, that you had enough of sermons preached to you during your course, and enough advice to last you for some years after graduation. The more frivolous forms of address, I considered, were ill suited to the dignity and traditions of these college halls ; so, to make my address instructive as well as entertaining, I, decided to give you a short account of what the Medical Student saw twenty-five or more years ago, and to compare his opportunities and advantages with those so richly accorded to you, Medical Students of the last decade of the Nineteenth Century. I am not so sure, however, that you have so great an advantage over the men who were educated here twenty-five to thirty years ago. In the first place, they had not so much to learn and had more time for clinical work in the hospitals, for, outside of the dissecting-room, the hospitals were the only laboratories they possessed: even practical chemistry, at that time, was not taught. Again, although you have many methods and instruments to aid in diagnosis, such as clinical thermometers and temperature records, cystoscopes, double barrelled stethoscopes, instruments and methods for estimating the proportion of white and red corpuscles in the blood, bivalve specula, urinometers, laryngoscopes, the typhoid reaction of blood, centrifugal machines, sphygmographs, fluoroscopes, X ray apparatus, and many other novelties which it would be wasting time to mention : still, it seems to me, that the older men trusted less to mechanical means of as-

sistance, (instruments), and more to their own natural powers of observation; in surgery especially, diagnosis was a much more accurate accomplishment than at present. Now, the fashion, especially in abdominal disease, is to "get in and find out;" then, symptoms and conditions were observed more clearly. There were no temperature charts then, and the pulse was more depended on to indicate the condition of the patient, while great attention, also, was given to the expression of the face and the posture of the individual: the appearances of the excreta, too, were closely examined. As an instance of the exercise of these powers of observation I should like to read you an extract from the work of the celebrated Galen.* (Quotation read). One no longer wonders at the great success of Galen when one sees to what good use he put his eyes and how easily he could deduce truths from very slight premises, though his methods were somewhat similar to those employed by the successful quack to-day.

Now, in regard to the pulse, the ancients thought that the arteries contained the vital spirits which were invisible air, for the arteries always appeared empty after death. Galen was the first to show, by tying the carotid in the horse in two places, that the intervening portion contained blood after death. Galen wrote a book on the pulse. He says, "First learn the natural pulse, then appreciate swiftness and slowness, hardness and softness of the coats of the arteries: then notice the intervals, observe equality and inequality." He then discusses the difference of the pulses of men and women, old and young, with the effects of sleep, of baths, of wine, of mental emotions, and of pain, concluding with a description of the pulse in various diseases. At this time and till long after the pulse was not counted; it is only within a hundred years that the second hand of a watch was used to count the pulse. In the 15th century the pulse was estimated by a water clock. Galileo tested the swing of the great lamp in the Cathedral at Pisa, (from which he got his idea of the pendulum) with his own pulse, which led to the isochronism of the pendulum being discovered. This led to the production of an instrument called the "pulsilogy", now long forgotten. It consisted of a scale of inches and a cord with a movable weight marked with a transverse line. The number of beats of the pulse corresponding to a given length was calculated by direct experiment depending on the isochronism of the pendulum. Thus a pulse would be spoken of, not by the number of beats, but of so many inches. (Lecture by Dr. Norman Morse, *Lancet*, Dec. 4, 1897.)

* The quotation, which was rather lengthy, described how Galen astonished his friend Glaucio by making a diagnosis of an obscure disease merely by observing the surroundings of the patient and his appearance; and he not only told the patient, who was a physician, what he had, but also what he thought he had, and what medicine he had taken. Of course this was to illustrate the advantages of cultivating powers of observation and making deductions from these observations.

I fear I have wandered somewhat from my subject but I hope I have not been tedious. It is interesting to one like myself, who has watched the various changes in the practice of Medicine and Surgery brought about by the wonderful discoveries of the last twenty-five years, to observe in what a matter of fact way you accept the existing conditions, such as asepsis, anaesthesia, arrest of hæmorrhage, the knowledge of the various causes of septic infection, the action of antitoxins, etc., as if this knowledge had always existed, and look upon such things, not as great discoveries or novelties, but much in the way the laity regard the telephone and telegraph, and the electric light and steam engine. To one who has lived before these things it seems very marvellous. Why, when I was a student, it was a rare thing to see a patient recover after an amputation of the leg, rare to see recovery after compound fracture of the leg, unless the leg was quickly amputated, a rare thing to see a recovery after an operation for empyema, and then this operation consisted of the introduction of a trocar, rare to see a recovery after operation for strangulated hernia. Intentional opening of the abdomen was never even suggested except for the occasional operation on an ovarian tumour and then the patient nearly always died. Abdominal surgery was called by the great Ferguson, abominable surgery. Secondary hæmorrhage was common, because ligatures were never cut short but the ends were left hanging out of the wound and after a few days pulled at each visit of the surgeon to see if they would come away, and when they did very often a gush of blood came too and the wound had to be reopened and the artery secured for a second time. It was looked upon as a very serious matter if a vein was accidentally wounded; its closure was attempted by plugging the wound with muscle or fat, but pressure was what was most relied upon; a ligature was never placed upon a vein, this would have been looked upon as murder. The cause of pyæmia was not known and it was confounded with rheumatism. We spoke of "laudable" pus and expected to see it in every wound. Healing by first intention was looked upon as a miracle. We knew nothing then of germs or sepsis or antisepsis, but operated with dirty instruments and septic hands on septic parts and wore, as a rule, coats which had for years been baptized with the blood of the surgeon's victims. Some operations performed with celerity were very successful, such as removal of tumours in the neck, and of stone from the bladder. Our operations, in those days, consisted chiefly in the amputation of limbs and the ligation of arteries. Very little other operative work was done. Excision of joints was just coming in when I commenced to study, the late Professor Fenwick being the pioneer of that work on this continent. Cancers of the breast and other parts were not operated on until they were so evident that any one could tell what they were, and operative procedures, undertaken then, were

invariably of no use because too late. What a change now in our procedure.

Perhaps in surgery the most marvellous modern discovery after anæsthesia, which has rendered the extraordinary modern operations possible, is the knowledge that sepsis is due to the distinct and definite action of certain well-known micro-organisms, and when this action is suspended or these germs are killed or prevented from entering the wound, healing takes place without any difficulty. In medicine, the proved relationship of micro-organisms to some of the most virulent forms of infectious or contagious disease, has been well established and many methods have been devised for destroying these without in any way injuring the person in whose body they are multiplying. Another remarkable discovery, which is so recent that most of you remember its inception, is the rendering of the individual immune by the injection of some antitoxin. Not so many years ago our only hope in diphtheria was tracheotomy when the worst came to the worst, and this was only palliative. In most severe epidemics of diphtheria, 40 to 50 per cent. died. Now, under antitoxin the records at the Civic Hospital last year gave a death rate of only 8 per cent., and it would have been less had the cases been brought earlier. It is hoped the scope of these antitoxins before many years will be much extended; it is used successfully now in tetanus and rabies.

Another remarkable recent discovery which seems almost a fairy tale, is the knowledge of the influence of internal secretions of certain ductless glands, as the thyroid and thymus, suprarenal capsules and pituitary gland, upon metabolic processes. Any one who has seen an idiotic Cretin or a patient with Myxedema restored to intelligence and health will have some idea of the scope of this method of treatment. The knowledge that a subject that has bled to death still has in his body enough blood to have supported life if it only could have circulated, has been known to us less than twenty years. What prevented the circulation of the blood was diminished blood pressure. Now, in consequence of this discovery, we do not inject blood, but fluid sufficient to raise the blood-pressure to its former height. Saline solution, a teaspoonful of salt in a pint of hot water, is the simple solution used, and the solution need not be injected even into the veins, but if it is injected in the subscapular or submammary cellular tissue, it does equally well. Wooldridge has shown that when a patient recovered after transfusion of blood it meant that the transfusion had failed, the blood having escaped into the cellular tissue outside the circulation, whilst when transfusion was mechanically successful, it was fatal. Injection of saline has saved many lives even when injected into the rectum or left to be absorbed in the peritoneum. This knowledge of the efficacy of saline solution has come to us from the experiments of the physiologists.

Many other novelties and wonders are daily being made known, such as serum therapy, etc. What the future will bring forth one cannot say, but if the next twenty-five years are as rich in discoveries and the practical applications thereof, you will have much to interest you in your future careers. At the beginning of this century, medical men thought they had reached the end of their advancement, and, in fact, Boyer, after the French war, said "Surgery seems to have attained the highest degree of perfection of which it is capable." How false his estimate was, the record of advance since then has fully shown. Cordoreet at the end of the last century, when being hunted to death by a vindictive council was nearer the mark when he said that improvement in the practice of medicine must in the end put a period to transmissible or contagious diseases, and he goes on to say that death will be nothing more than the effect either of extraordinary accidents or of the slow and gradual decay of the vital powers. At the time this was written, small-pox devastated the nation, and there was hardly a person, high or low, not marked with the disease. Jenner's discovery has altered this, and on the same lines many other improvements have been introduced and the virulence of epidemics much abated. It has been prophesied that in the future there will be but little work for the surgeon except to attend to accidents, for the three conditions which call for surgical interference are, general sepsis, tubercle, and cancer : and it is asserted that in the near future a toxin will be discovered which will as surely destroy the micro-organisms of these affections as now those of diphtheria and tetanus are destroyed. If the future of surgery is so bright, what about the past? Before the discovery of anæsthesia, surgery had a very limited scope, but anæsthesia paved the way for the brilliant results achieved by modern aseptic surgery, which without anæsthesia would have been impossible. I have heard many of the surgeons, who practiced before the discovery of anæsthesia in 1847, tell of the horrors of the operating room ; rapidity of operation was their one aim. Surgeons with ordinary bowels of compassion dreaded the coming operation as much as did the patient. Abernethy said he felt as if he were going to be hanged. Liston lay awake in mental anxiety the night before, and Cheselden turned sick at the thought of the pain he was going to inflict. Some one, speaking of the patient, said "his progress might be traced by frightful yellings, or, at least, by sobs of deep distress, and occasionally a number of stout assistants were scarcely sufficient to prevent a self effected rescue and escape." Nelson, when his arm was amputated after the action of Tene-riffe, manifested his usual courage and firmness, yet so painfully did the coldness of the surgeon's knife affect him, that, when going into action at the famous battle of the Nile, he gave standing orders that the amputating knives should be left in hot water.

In the Dublin Hospital Reports for 1827, I came across the narrative of a case of excision of the knee by Mr. Crampton, afterwards Sir Philip Crampton and Surgeon-General of the Forces. He describes the patient, a girl, coming into the operating room with great fortitude and even cheerfulness, but, on the instant the knife was applied to the skin she became so ungovernable that four strong assistants could, with the utmost difficulty retain her upon the table. "The removal of the extremity of the femur was a work of great difficulty and danger as when the knife was passing between the bone and popliteal artery no entreaty could induce the poor girl, whom terror seemed to have deprived of her reason, to remain one moment at rest. She struggled so violently with both limbs that it was with a degree of labour and anxiety I had never before experienced that I at length succeeded in passing the edge of the knife round the condyles posteriorly thus detaching the divided end of the femur." It is interesting to know that the patient recovered and had a useful leg. "I could walk long distances without discomfort," she said, and a year after she was able to stand or walk the length of a day."

An interesting account is given of a medical friend of Sir James Y. Simpson who was so unfortunate as to lose a limb by amputation. Here is his pathetic description:—"The operation was a more tedious one than some which involve much greater mutilation. It necessitated cruel cutting through inflamed and morbidly sensitive parts, and could not be despatched by a few strokes of the knife. Of the agony it occasioned, I will say nothing. Suffering so great as I underwent cannot be expressed in words, and thus fortunately cannot be recalled. The particular pangs are now forgotten: but the blank whirlwind of emotion, the horror of great darkness, and the sense of desertion by God and man, bordering close upon despair, which swept through my mind and overwhelmed my heart, I can never forget however gladly I would do so..... During the operation, in spite of the pain it occasioned, my senses were preternaturally acute, as I have been told they generally are in patients under such circumstances. I watched all that the surgeon did with fascinated intensity. I still recall with unwelcome vividness the spreading out of the instruments, the twisting of the tourniquet, the first incision, the fingering of the sawed bone, the sponge pressed on the flap, the tying of the blood-vessels, the stitching of the skin, and the bloody dismembered limb lying on the floor. Those are not pleasant remembrances. For a long time they haunted me, and even now they are easily resuscitated; and though they cannot bring back the suffering attending the events which gave them a place in my memory, they can occasion a suffering of their own, and be the cause of a disquiet which favours neither mental nor bodily

"health." * Of course all this occurred before my time, but it is only fifty years ago that such experiences were common.

The condition of our hospitals has much improved since my student days. The small, narrow, dark, and ill-smelling wards have given place to large, spacious, well-ventilated apartments, presided over by a young woman of pleasant appearance smartly dressed in washable garments, and assisted by two or three more like her, who take accurate observations of the temperature, pulse and respiration, and put them on a chart so that he who runs may read. In my day, age and frowsiness seemed the chief attributes of the nurse, who was ill-educated and was often made more unattractive by the vinous odour of her breath. Cleanliness was not a feature either of the nurse, the ward, or the patient, each one did as best pleased her, and her "langwidge" was "frequent and painful and free." If the day-nurse was bad, the night-nurse was worse, and as a *solatium* to help her to bear the burthen of the night, the stimulants which were then freely prescribed for patients, to make up, perhaps, for the lessened tone due to purging and sepsis, often found their way down her throat. One nurse had charge of several wards on different flats, and if a patient was violent, or even delirious, he was strapped down to his bed. This has occurred since I was on the staff of the hospital, before the introduction of the modern training school for nurses. I remember on one occasion, having operated on a man for strangulated hernia, and, there being no one to restrain him, the patient got out of bed and sat out on the back gallery, then he helped himself to tap-water and drank milk which was at the bed-side of other patients and also ate bread. I found this out accidentally from another patient and complained about it, so next night, when I went down, I found my patient gagged and strapped hand and foot to the bed to prevent him from misbehaving again. The man got a pneumonia of which he died. Armies of rats frequently disported themselves about the wards and picked up stray scraps left by the patients and sometimes attacked the patients themselves. This is all now changed, and the modern hospital is something to be proud of though it errs perhaps on the side of luxury. The beautiful rows of spotless beds, the shining dustless floor, the fresh air, the order and freedom from sadness, in fact, the universal cheerfulness (especially in surgical wards) of the patients, and last but not least, the nurses of whom I have already spoken. The operating rooms nowadays are palatial marble halls, where formerly they were shambles, furnished with pulleys for reducing dislocations, reeking with odours and adorned with the blood-stained and blood-soaked table. In a celebrated hospital I saw in Dublin the operating room was built over a cess-pool. When I was in Vienna in 1874 and 1875, antiseptic surgery, which I had seen under Lister in Edinburgh, had not yet penetrated so far and the mor-

* The Semi-Centennial of Anæsthesia, Boston, 1887.

tality was appalling. I never saw a case of strangulated hernia recover after operation. The great Billroth presided over the chief surgical clinic and his mortality was quite as great as his neighbours. In England there had always been more or less attention to cleanliness, and the results of English surgery were fairly good, so that they were on this account much slower to take up antiseptic surgery, feeling quite satisfied with their results. In Germany and Austria, the change from septic to antiseptic surgery worked a miracle, from being laggards in the surgical field, the Germans became leaders and many of the triumphs of modern surgery are due to the good work of the Germans. They were not satisfied with the modest little steam boiler of Lister, but went to extremes, and had a ten horse-power boiler in a special room adjoining the operating room, and from it poured out volumes of antiseptic spray till the operators, patient, and assistants were wet to the skin and the atmosphere was worse than a London fog. Soon men found out that quite as good results were obtained by irrigation so the cry was "*fort mit dem spray*", and the boilers became obsolete. Now there was a Niagara of antiseptic solutions, the operator and his assistants waded about the operating room in long rubber boots. Visitors who had no boots got on chairs and watched the deluge of antiseptic lotions which played continually on the patient and on the floor. Soon it was found that this was doing too much and Aseptic Surgery came in, deluging with antiseptics was abandoned, and dry dressings were adopted, with aseptic and sterilized materials and the patients did quite as well. The tendency to-day is to simplify methods and to abolish the elaborate antiseptic ritual which succeeded to the days of dirty surgery. What the next new fad will be, I cannot say, but owing to our increasing knowledge of bacteria and their influence on the tissues our methods are becoming much modified. As was said of Mrs Mapp, a celebrated quack, who flourished in the last century :—

"In physick as well as in fashion we find,"

"The newest has always the run with mankind."

Byron has said,

"Thus saith the preacher. Naught beneath the sun

Is new, yet still from change to change, we run.

What varied wonders tempt us as they pass,

The cow-pox, tractors, galvanism, gas,

In turn appear, to make the vulgar stare,

Till the swollen bubble bursts, and all is air."

So far I have spoken only of the hospitals, our college teaching, except in the Practice of Medicine and Surgery was most elementary. Our anatomy was a farce. I never, as a student, dissected the pharynx, the thorax, or the abdomen. We used to toss up as to who should take out the intestines and the abdominal organs. The anatomy of hernia and lithotomy together with the arteries of the extremities comprised all the surgical anatomy. The anatomy of the convolutions of the brain was

unknown, and as for the course of the fibres in the brain and the spinal cord, they were a mystery. Physiology was not much better. The college possessed *one* microscope and I remember well waiting my turn for over an hour to see the circulation of the blood in the frog's foot. Sometimes, towards the end of the session, we had a day when we took turns to look at about a dozen imported microscopic slides of the various tissues.

In my student days and for some time afterwards, the cause and origin of phthisis created much dispute and acrimonious discussion. The discovery of the tubercle bacillus by Koch, followed by experiments with tuberculin soon cleared the atmosphere and settled the question of the origin of the disease and its contagiousness. Koch's discovery was followed by many others, and new fields of investigation were opened and much light thrown upon the cause of disease. Of course this phase went to extremes and everybody was discovering bacilli. One was discovered in old age, another in fracture of the leg and so on, but the knowledge of the bacillary origin of disease affords us some hope that in time to come remedies may be found which will abolish certain troubles which at present afflict the human animal and others. *Materia Medica* was of the most ancient character, though dragon's teeth, powdered skull and mummy were not in the list of drugs. Still we heard a good deal about musk and castoreum, antimony and ipecac, cassia and squills, tragacanth and gum acacia, coccus and Spanish fly. Now we have firms of manufacturing druggists who not only put up beautiful preparations of various drugs in a portable and palatable form, but they kindly tell us what to use them for, and how to use them. We shall soon have our drugs given in the streets perhaps from "penny-in-the-slot" machines. We had some very good bedside teaching from men like the late Dr. Howard who was a born clinical teacher. We spent considerable time in the hospitals picking up what crumbs we could from the attending physicians, and making out the rest for ourselves. The clinical examinations, like the clinic, were conducted in the hospital, I admit, but certainly not at the bedside. Now, all this is changed, and any one who wishes practical instruction in any subject is able to get it in well equipped laboratories. Your opportunities are great, Gentlemen, and see that you take proper advantage of them. Much is in the womb of the future, great discoveries by which disease will be arrested, much diminished, or abolished altogether, are in the air. We are in a progressive age, and one which is teeming with interest. God grant that our brains will keep pace with what it is necessary to learn, so that we may not be left behind in the rapid march of science. I trust that this great University will retain its place in the van which it has gained by hard work and perseverance, and that it will never lag behind. In the hands of the younger generation, your hands, Gentlemen, is the lamp of scientific

progress. See that you keep it brightly burning and never let it run out of oil of research and careful observation.

Now as to medical education, I am a strong advocate of a five years course, but believe the fifth year should be devoted to practical work only, not to lectures. Owing to the faulty preliminary education of most students, much time is wasted at first in learning how to learn, and then owing to the fact that their powers of observation have never been cultivated, they have to learn how to observe for themselves and not through the medium of others. I find that many students do not know the meaning of words, and they have only a parrot knowledge of their subjects, a truly deplorable state of affairs. Learn less but learn that well. The fault of modern education is that it attempts too much. Numberless subjects are dipped into, not mastered, and all the new methods and subjects are much elaborated whilst the old are comparatively neglected. It is my opinion, that although every one should have a laboratory training, it is possible to have too much even of this ; that the true laboratory of the medical student in his final years is the hospital, and hospital should be attended without the fear of a coming examination before one's eyes, and without the tediousness of always attending lectures. The performing of large and important operations in the public theatre is not profitable to the student, nor should didactic lectures be given in the operating theatre, with the patient in bed for a text, be considered clinical lectures. It is most difficult to teach, clinically, large classes, hence, these should be divided up, and a number of men appointed to give tutorial instruction at the bedside. In surgery, the students in rotation could be made actual helpers, should sew up wounds, tie ligatures, etc., under the direction of the chief or his assistants. The out-door service should be made use of. I hear now it is much neglected because of want of time. This should not be, for it is a most important service, and the knowledge gained there is of inestimable benefit to the young practitioner and furnishes the class of cases he is likely to see the most of. Besides, in the out-door clinics the instruction is truly clinical and practical. I think you are over examined and fear you consider examinations are the end of all things. Alas ! When you have got through them, the first step only has been taken, and there are many more precipitous heights yet to climb. One will begin to make progress when he realises how very little he knows of any subject. To seek knowledge for its own sake and not merely to pass examinations or for what it will bring in dollars and cents, is one of the things to be expected at the coming millenium, but endeavour to do this as nearly as you can.

“ Happy is the man that findeth wisdom and the man that getteth understanding, for the merchandise of it is better than the merchandise of silver and the gain thereof than pure gold.”

SYPHILIS AND THE LIVER.*

BY

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Without doubt the most important fact elucidated by a study of the hepatic lesions of Syphilis is that, from an anatomical and histological point of view, no distinction can be drawn between secondary and tertiary syphilis.

Clinically I admit that such a distinction is useful, nor do I wish it to be thought for a moment that I imagine it can be done away with, although even clinically—as seen in connection with the syphilodermiæ—the establishment of a hard and fast demarcation between what is secondary and what tertiary leads not infrequently to confusion. The most that can be laid down is that when syphilis is acquired in the ordinary way, by sexual intercourse, the extension of the disease in general follows a definite course, the tissues tending to be affected in definite order. Or perhaps it is more correct to say that in syphilis as in other zymotic diseases—I use the term zymotic in its strict sense—there is a local or tissue predisposition, so that certain tissues are apt to be more extensively and more markedly affected than others, the virus multiplying more readily, so that in them as a consequence, there is an earlier and more pronounced reaction.

But while this is the case, the reaction in a given tissue is of like order, be the period of local infection early or late: at most there may be histological differences caused by variation in the interaction between virus and tissue. If the virus be strong or the tissue be possessed of feeble reactive powers, the histological appearances differ to a greater or less extent from what is seen when the virus is weak or the tissue possesses originally or has acquired strong reactive power. And as a corollary to this, it may be said that where the virus is powerful and there is rapid proliferation there, in such diseases as syphilis and tuberculosis, the course of the disease is modified so that we have to deal not solely or not in the main with the local disturbances caused by focal growth of the virus, but see well marked other anatomical changes brought about by diffusion of the toxins. In other words, where the tissues are susceptible and the virus relatively powerful there may be generalised tissue disturbances apart from the granulomatous developments directly caused by the focal proliferation of the germs. For at the start, it must be laid

* Being a contribution to the discussion upon Syphilis at the New York Academy of Medicine, March 9th, 1899.

down that although as yet we are uncertain as to the exact causative germ of the disease, syphilis is a disease of microbic origin. The more one studies, the more is one convinced that the analogy between tuberculosis and syphilis is complete—only in the one, we have isolated and studied the germ, in the other, we have not.

THE LESIONS OF CONGENITAL SYPHILIS.

For what do we find with regard to the hepatic manifestations of syphilis? Let us first take those of the congenital disease. There are many reasons why these should be considered first: (1) These were the first hepatic manifestations of the disease to be studied and clearly recognized; (2) they are much more frequent and more extensive than are hepatic lesions in the disease of post-natal acquirement, and (3) death occurring very frequently within a month or two after birth there is less uncertainty as to the period of development and duration of the lesions than there can be in the disease of adult life.

That the liver should be so frequently affected in this form of Syphilis is easily understood if we remember that the specific syphilitic lesions of the new born are congenital and not inherited, that the infection is through the placenta and that, as a consequence, the infected blood coming from the placenta passes through the liver before it reaches the heart or any of the other tissues of the foetal organism. Chiari's well known observation may here be repeated, namely, that in 144 cases of infantile syphilis, he found the liver affected, and that extensively, in 123, or nearly nine-tenths. In the adult on the other hand both brain and testicle are more frequently the seat of extensive lesions, and when it is remembered how relatively common is tertiary syphilis and how relatively uncommon specific disturbances of any one of these three organs, the contrast between the frequency of congenital and acquired hepatic disturbances becomes most manifest. At the same time I am not prepared to accept Fournier's statistics as perfectly reliable: careful observation of 3429 cases of tertiary syphilis would surely reveal clinical evidence of more than 9 cases of hepatic implication.

This is not the place for me to point out the vulgar fallacy of speaking of inherited instead of congenital syphilis—suffice it to say that Gartner's *reductio ad absurdum* of the inheritance, so-called, of tuberculosis,* must hold equally for syphilis. Indeed, were it possible for the bacillus or germ of syphilis to be present in the ovum at the moment of fertilization, to lie latent during the embryonic period and only to cause reaction during foetal life, that is to say, after the different organs have assumed the form and structure which will pertain to them through

* Zeitschr. f. Hygiene, XIII., 1893, p. 101.

post-natal existence, even then, such presence of the germ would not be true inheritance: it would be an epiphenomenon; for true inheritance demands the carrying over of features peculiar to the germ plasm of the parents. The accidental inclusion of a microbe in the ovum is not a matter of inheritance.

The different lesions due to syphilis to be met with in the infant's liver are, I think, included in the following list:

I. Well-defined gummata.

II. Miliary gummata with generalised fibroid change affecting circumscribed areas of the liver.

III. Admixture of miliary gummata and generalised fibrosis affecting the whole organ, which is, in consequence, enlarged.

IV. Generalised atrophic cirrhosis without much evidence of gummata but associated with icterus, œdema, etc., the organ being very granular and contracted.*

Time forbids that I should quote examples of these different conditions. Quite the commonest is the second form in which there are no well developed gummata as generally understood, but on section through the affected areas, numerous minute focal collections of small round cells are to be made out, invisible or only just visible to the naked eye, and in their neighbourhood extensive pericellular fibrosis, so that the organ presents a patchy appearance, paler areas of large size standing out against the darker red or liver-colored background of the unaffected tissue. Here we have to deal with a relatively early and progressive stage of disease, in which there is little or no necrobiosis and development of gummy matter.

There are, however, fairly frequent cases on record of the development of true gummata, easily seen by the naked eye, some as large as an almond, and showing signs of contraction, recognised, not, I believe, in children born dead but in those dying as early as two weeks after birth (Canton.)†

The relationship between these miliary gummata and the gross gummata of the liver is that between miliary tubercles and isolated caseous tubercles of the same organ. We never think of suggesting that the two latter forms of tubercle indicate different periods of the tuberculous process. At most, we regard the first as of more acute, the second as of more chronic development. We know full well that miliary tuberculosis of the liver may develop at any stage of the disease, either soon after the primary infection or only as a terminal event after long years

* To this list I find must be added the (very rare) appearance of tumour-like masses, the result of centrifugal necrosis and fibroid change, with peripheral overgrowth of the liver tissue to which I refer later in discussing the syphilis of the adult.

† Trans. Path. Soc., Lond., XII., 1862, p. 113.

of slow and, it may be, intermittent extension of the disease elsewhere. The fact that both gross and miliary gummata may occur in the liver of the newly born is an absolute proof that the two forms are not characteristic of two different stages or periods of the disease. 'Absolute', that is to say, unless we are prepared to admit that while certain tissues such as the skin, present well marked secondary lesions, others may present either secondary or tertiary changes. Such an admission would make the terms 'secondary' and 'tertiary' valueless. For it must be kept clearly in mind that while the livers of these syphilitic infants show extensive fibrosis and indications which usually are recognised as of tertiary type, the cutaneous eruptions are secondary manifestations.

Over and above the granulomatous changes in the infant's liver it is most noticeable that a more generalised affection is peculiarly frequent, namely, fibrosis affecting either the whole organ or larger or smaller areas. Such fibrosis might be due to various causes; indeed, our knowledge of the etiology of cirrhotic changes in the liver, as in the kidney, and our knowledge of fibrosis in general is not sufficiently advanced to permit us to make positive statements. And, yet, since 1896 when, in this very room, although not before your Society, it was my privilege to deliver the Middleton-Goldsmith Lectures and I discussed the pathology of fibrosis in general, some little advance has been made in our conception of the process. For, on the one hand, Flexner* has shown that toxic substances (the blood serum of another animal), may lead to the development of cirrhosis, and, on the other, Weaver,† of Chicago, within the last few weeks, working (I think I may say) along lines suggested by certain publications of mine,‡ has demonstrated that bacteria exist which directly induce hepatic cirrhosis. Thus it would seem that whether in the process of excretion of toxic substances by the liver cells, or by the taking up of certain bacteria, and the influence of their toxins when so taken up, the liver cells may undergo a parenchymatous degeneration so intense that death ensues and, following thereupon, a replacement fibrosis occurs, more or less pure and unaccompanied by acute inflammatory change according as to whether the parenchymatous disturbance is unaccompanied by interstitial irritation or not. Where many miliary gummata are present, there eventually, much fibroid change is brought about by the tissue changes in their immediate neighbourhood.

We are not as yet in a position to state whether the fibroid change of this type in the liver of the syphilitic child is a consequence of the attempted removal of the syphilitic germs from the portal circulation by the agency of the endothelium of the hepatic blood vessels and by the liver cells, or whether it is the circulating toxins of the disease that

* Flexner, Trans. Path. Soc., Philadelphia, 1896.

† Weaver, Philadelphia Med. Jour., Feb. 4, 1899, p. 234.

‡ MONTREAL MEDICAL JOURNAL, July, 1898; British Med. Journal Oct. 22, 1898.

cause the disturbance. To me, it would seem that one or other of these causes must be at work. The pericellular character of the cirrhosis is against the change being in the main a fibrosis following upon round celled and miliary gummatous infiltration, while the fact that the change may affect the whole organ, as again the very extent of the areas affected when the whole organ is not involved, is quite opposed to the view that we have to deal with primary focal necroses such as are to be met with in Typhoid and other acute infective diseases, or with infarctous disturbance.*

If Marchand's cases of atrophic granular cirrhosis, occurring in fœtuses born dead are, as he holds, of syphilitic origin, they afford evidence of the extreme results of such fibrosis following upon generalised syphilitic parenchymatous hepatitis.

Thus, to sum up the broad features characterising the syphilitic manifestations in the infant's liver:—

(1.) Syphilis may lead either to granulomatous deposits in the organ or to interstitial fibroid changes.

(2.) The specific granulomata may be present either in the form of minute multiple miliary gummata, or of isolated larger gummata such as in general are regarded as being of tertiary nature.

(3.) It is not possible to regard the one form as secondary, the other as tertiary, for either may co-exist with cutaneous disturbances of the secondary type.

(4.) By analogy, the interstitial fibroid change, so common in infantile syphilis, would appear in the main to be secondary to a degeneration and necrosis of the hepatic parenchyma induced by the action of the toxins of the syphilitic virus upon the individual liver cells. In part it is developed in direct association with the development of miliary gummata.

THE LESIONS OF ACQUIRED SYPHILIS.

Passing now to the hepatic disturbances in syphilis, of post-natal acquirement, we find it more difficult to determine the age and duration of the lesions found, a difficulty due to the fact that syphilis is not in itself a cause of death during the months which immediately follow infection. I know of no adequate study upon the livers of those who, suffering from well marked secondary symptoms, have succumbed to intercurrent disease. A thorough investigation of the visceral changes occurring in the secondary period, remains as much a desideratum to-day as it was in the seventies when Jonathan Hutchinson called attention to this gap in our knowledge. It is however probable that in the vast majority of cases, the liver is not gravely affected during the secondary stages of the disease, for otherwise, it is most unlikely that with the vast number

* Dr. Jacobi informs me that he has met with one of these cases and could only conclude that it was of syphilitic origin.

of autopsies made annually, a fair number of instances of death during this stage, should not have been investigated, so that any marked departures from the normal in the condition of the organ, should by now have gained recognition. It is equally true, that there might be a certain amount of disturbance—the existence of miliary gummata or again a moderate extent of parenchymatous degeneration—which might easily escape detection, or be ascribed to other causes.

Some few cases are on record of extensive hepatic derangement during the secondary state. Thus, Hilton Fagge* reports the case of a female of 23 in whom there was a history of syphilitic rash with loss of hair and macular syphilides; jaundice supervened and the patient became drowsy and comatose. At the autopsy, the liver, which weighed 46 ounces, was of an opaque, bright yellow color and of dense consistence. The surface was mottled, the left lobe resembling very closely that of the infantile syphilitic liver;—on section, the organ appeared pale and semi-pellucid, and microscopically, the parenchyma was seen to be replaced by connective tissue. Unfortunately the description given does not extend to full details. But clearly here is a case of generalised cirrhotic change in secondary syphilis not unlike that found in the infantile disease.

There are on record some few other cases of like nature. To my regret during the last few months I have been away from laboratories and libraries, but in the course of an afternoon's search through the literature, I have come across quite a series of cases. One of the clearest examples is that recorded by Neumann,† in his admirable article upon syphilis, the case of a man of 20 years ill for about 8 months, who apparently was infected in June 1893 and in March 1898, a papular eruption was seen upon the external genitalia and mucosa of mouth together with slight icterus. The icterus increased and there was great abdominal pain, while ecchymoses appeared on various parts of the body. The liver diminished in size and 19 days later the patient died with uræmic appearances. The autopsy was performed by Kolisko who found a condition of catarrhal icterus with cholæmia together with the very interesting condition of "regeneration of the hepatic parenchyma in the form of adenomatous growths following upon acute atrophy. Kratz‡ records a similar case. Neumann quotes several cases of acute parenchymatous hepatitis in the secondary stage of the disease and holds it not improbable that there may be a relationship between the syphilis and acute atrophy of the organ.

Dittrich from a study of 46 cases has concluded that acute syphilitic hepatitis in general occurs during the secondary period. Engel- Rei-

* Hilton Fagge, *Trans. Path. Soc. London*, XVIII., 1867.

† Nothnagel's *Specielle Pathologie*, Vol. 23, p. 409.

‡ 66 *Versamml d. Naturfor und Ærtze*, Vienna, 1894.

mers,* on the other hand is inclined to believe that the acute yellow atrophy seen in recent syphilis is secondary to obstruction of the bile ducts, for in three cases he found enlarged glands compressing the ductus communis choledochus. I must, however, confess that it is difficult to follow his explanation; mere obstruction will not lead to acute yellow atrophy.

It will be noticed that in several of the above cases jaundice manifested itself. Now jaundice is a not uncommon event in secondary syphilis. Attention has frequently been called to its existence from the time of Ricord and Gubler onwards; Lancereaux alone collected twenty one cases, Lasch,† forty-nine. Within the last two years, Neumann, Joseph and Uhlmann have redirected attention to its prevalence. I cannot but think that this jaundice must afford another indication of what I have already dwelt upon in connection with infantile syphilis, namely, that the liver, being a great excretory organ, may in certain cases be so injured by the action of syphilitic toxines, that parenchymatous and it may be catarrhal hepatitis is set up and the jaundice be an indication of the functional disturbances due to this cause. This view appears to be more probable than either of the other suggested explanations, to wit, that the jaundice is obstructive and due either to specific growths in the bile ducts or to the pressure of enlarged lymph glands at the hilus of the liver upon the larger bile passages.

We thus, even in the early stages of the disease of postnatal acquirement, obtain evidence pointing to the existence of generalised effects of syphilis upon the liver. As I have pointed out elsewhere‡ a fairly extensive fibrosis, apparently independent of the gummatous developments, is not infrequently to be met with in cases where there is active progressive syphilis long years after primary infection.

Turning now to the more generally recognised evidence of syphilis affecting the liver in the tertiary stage, namely the gummata, and discussing first the large gummata, which are the most characteristic lesions of acquired syphilis, it must be clearly borne in mind that two distinct conditions are popularly confounded together and both regarded as tertiary manifestations, namely :—the fibroid pittings and cicatrices which are the final indications of gummatous deposits in the liver, which remain after complete absorption of the original gummatous mass. We not infrequently come across these disfigurements and distortions of the liver in the bodies of those who for years have presented no indications of active syphilis, and they must, I hold, be regarded as obsolete gummata. Indeed, in one case upon making microscopic sections through a

* Monatschrift f. prakt. Dermat., 1892, quoted by Neumann.

† Lasch, Berlin Klin. Wochenschr., 1894.

‡ MONTREAL MEDICAL JOURNAL, June, 1898, p. 401.

most characteristic puckering, I found scarce any fibroid tissue left : that also had undergone absorption. On the other hand,, we have to recognise gummata with cheesy or gummy contents surrounded by fibrous tissue, which are latent or obsolescent, and others again presenting like characters,—but surrounded by hepatic tissue which under the microscope presents infiltration with small round cells and evidence of progressive syphilis. It is these latent and active gummata which alone are of any importance, for both indicate that the disease, to say the least, has not been eradicated from the system.

The important point to notice is that in one liver we at times meet with all three forms above mentioned. I have come across cases at autopsy showing well marked cicatrices and puckerings of practically obsolete gummata, large well defined gummata with necrosed centres, and upon studying the sections of the liver from the neighbourhood of the latter, I have there seen the irregular minute collections of small round cells which in an infant's liver, we would have had no hesitation in describing as miliary gummata. These appearances I have seen in the liver of a man dying apparently only between two and three years after primary infection, as again in the liver of another infected 14 years before death.

The evidence before us all points to the fact that in the adult as in the infant's liver gummatous development may occur at any period after the disease has become generalised throughout the body.

From what has already been stated it follows that the same lesions are to be met with in the adult liver as are recognisable in the organ affected by ante-natal disease. There may be :

I. Large well formed gummata.

II. Miliary gummata.

III. Jaundice and acute parenchymatous hepatitis.

IV. Syphilitic cirrhosis.

But, clearly, the element of time introduces frequently a difference and appearance not seen in the infantile organ. Thus we encounter in addition:

V. Obsolescent gummata, large gummata undergoing involution and absorption with surrounding and limiting fibroid change and contracture. This is the lesion most frequently met with and most typical of the syphilitic liver of the adult* and,

VI. Obsolete gummata represented by puckering of the organ and a relatively small amount of fibroid growth radiating from the seat of the previous gummatous formation—and by nothing else.

* What is the causation of the coarse bands of fibrous tissue radiating from these obsolescent gummata, I must leave an open question. It has been suggested that they indicate a tendency for the fibroid change to be developed along the course of the main lymphatic vessels leading from the gummatous focus.

VII. A further lesion which must be referred to, one not seen in the infant* is the development of tumour-like outgrowths, so sharply defined and so large as not unfrequently to lead to the false diagnosis of malignancy. The structure of these masses affords some ground for believing them to be the outcome of a slow progressive centrifugal infection of the liver tissue from an original isolated gummatous focus (or small collection of neighbouring specific tubercles), with associated reactive hyperplasia of the liver tissue at the periphery—progressive in-migration of the newly formed liver tissue by miliary gummata and eventual replacement of these by fibrous connective tissue, so that, microscopically, these tumour-like out-growths present an outer layer of liver tissue infiltrated by collections of small cells, enclosing a dense mass of fibroid tissue with **more or less** evidence of ‘gummy’ degeneration.

Time, therefore, is an element causing difference in the appearance of the adult and infantile lesions. But this is not the only one. The other, and yet more distinctive, is the predominance of generalised fibrosis in congenital syphilis, of focal granulomatous changes in the syphilis of adults. The explanation of this difference would seem to be that the young liver cells are more susceptible and less resistant to the injuries inflicted by toxic substances. They are more prone to degenerate, and, if the view here enunciated be correct (namely that the fibrosis is largely of the ‘replacement’ type), we have in this feebleness of the young liver cells a sufficient explanation why fibrosis predominates. With the adult cell it is different. Inasmuch as a main function of the liver is to eliminate toxic substances from the circulating blood, its cells, with advancing life, become capable of withstanding toxins to a relatively very considerable extent. It is, indeed, remarkable to observe what extreme degenerative changes of the cloudy and even of the fatty type may be observed in the liver cells of an adult rabbit, for example, a few hours after intravenous inoculation of 1 ccm. of a culture of such a form as the colon bacillus, and yet in the course of a few days (as determined in other rabbits similarly treated), the liver cells may have completely recovered show no sign of the intense disturbance set up by flooding the system with the bacilli and their toxins.

Thus in the adult (as distinguished from the senile), there is not the tendency for extensive fibroid change to manifest itself under the action of irritants, which in the young, lead to the production of the same.

It may be asked why the liver in newly born infants more than other organs is susceptible to these degenerative changes. There are, it seems

* In this, as already stated, I am mistaken. I owe to Dr. Jacobi (verbal communication), a reference to a case by Cohn of one of these tumour-like formations in the infant presenting all the features here described, and Prevost (*Ctes. Rendus de la Soc. de Biol.*, 1866-67, 4th series, III., p. 92), would seem to have encountered yet another case of this type.

to me, two main reasons : (1) the liver is especially concerned in the elimination of toxic substances and its cells bear the brunt of intoxication by the syphilitic virus. (2) Placed as it is, between the placenta and the general circulation of the foetus, its cells tend to eliminate toxic materials brought by the umbilical vein : in this way, again, they bear the brunt of intoxication, and at the same time reduce the amount of toxic material capable of acting deleteriously on the other organs. But it must be remembered that other foetal organs may also show extensive fibroid change.

There is one other factor in the production of specific lesions which, so far, I have not touched upon, one which, judging from studies made more especially upon the syphilitic heart and brain, may very possibly be of signal importance. I refer to arterial change, endarteritis and periarteritis. We know however, practically nothing concerning the part played by this in hepatic lesions ; I can therefore, but mention it and pass it by.

Hence, to sum up; while the changes seen in the adult and infantile syphilitic livers are etiologically and anatomically identical, they tend to present differences due, in part, to their relative duration, in part to the reactive powers of the hepatic parenchyma at different life periods.

THE TREATMENT OF DIPHTHERIA BY THE USE OF ANTI-DIPHTHERITIC SERUM.*

BY

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Formerly, the science of therapeutics borrowed its means of action from the vegetable and from the mineral kingdoms. To-day, we must add to those sources the animal kingdom, which owes its admission into the therapeutic art, to the discoveries of the illustrious Pasteur. Inspired by the principles thus engendered, Lister created antiseptic surgery which completely changed the method of operating and the manner of treating surgical patients. Then, Behring and Roux endowed medicine with serotherapy, which is tending to revolutionize therapeutics.

If nearly all surgeons are fervent advocates of antiseptic surgery, unfortunately many physicians have no faith in serotherapy, notwithstanding the fact that this method of treatment has shown its efficacy by lowering the mortality from diphtheria two-thirds or even more. To-day, every medical man should have a sincere faith in this remedy, an energetic faith. For, it is not only a question of applying the principle of serotherapy; but, further, a matter of applying it without delay. Negligent and tardy action compromises the value of the remedy and consequently the life of the patient.

It is true that oftentimes the parents are the cause of the delay in the administration of the treatment. But, it is our duty to convince them that serotherapy is the only efficacious treatment in cases of diphtheria and that it is effective only in so far as it is applied in the earliest stage of the disease. Who amongst us is there who cannot allege innumerable instances, instances of daily occurrence, both in private and in hospital practice, in which a pseudo-membranous condition of the throat has existed for several days without having been treated by injections of serum? Whether the fault be that of the parents or whether it be that of the attending physician, the consequence is the same, the compromising the cure of the case which can only be affected by the prompt and judicious use of serotherapy. Roux and Martin incessantly proclaim that prompt antidiphtheritic treatment is the first requirement to insure success.

We must not be surprised, however, if serotherapy has not yet finished with the labors of birth. Are there not, to-day, surgeons who obstinately refuse to avail themselves of rigorous antiseptic precautions; and

* Read before the Montreal Medico-Chirurgical Society, March 6th, 1899.

who would deny or even doubt the excellence of the Listerian method which has placed its author in the first rank of the men of this century?

Antidiphtheritic serotherapy is, truly, definitely a conquest in modern therapeutics, it has proudly established the proofs of its scientific value, despite the accidents which have occurred, and which may occur in the future. This treatment is undoubtedly the surest, the most efficacious and the most prompt in its results. The clinical documents accumulated since this method of treatment has been applied are the proofs of this allegation. In Germany, in France, in England, in the United-States, in fine, in all civilized countries, the treatment of diphtheria by serotherapy has given unhoped-for results.

In Germany, Schubert reduced to 18 per cent., and Canon to 20 per cent., the mortality which before the use of antidiphtheritic serum had been beyond 50 per cent. Koste in a series of 121 patients treated by injections of serum had a mortality of 33 per cent., while at the same time among 106 patients not treated by this method the mortality was 53 per cent. Aronson, Rats, and Baginsky had a mortality of only 13 per cent. among their patients.

In France, in 1894, Roux, Martin and Chailloux lowered to 26 per cent. the mortality that had hitherto been 51 per cent; and at the same time at the Trousseau Hospital where the serum was not employed, the mortality reached 60 per cent. Leberton placed the mortality at the "Hopital des enfants malades" to 12 per cent. Sevestre gives a death rate of 10 per cent.

In Vienna, Monti had a mortality of 18.4 per cent. amongst his patients. In the United-States, Biggs showed that the mortality was 10.4 per cent. in New York and 24 per cent. in the Willard Parker Hospital.

In England, Raw with the serum reduced the mortality to 12.5 per cent. when it had been originally 47.4 per cent.

"The Medical Annual and Practitioners Index" gives the statistics of 11,100 cases treated by the serum, showing that the mortality was 15.4 per cent. Since I have been physician at the Civic Hospital 691 patients affected with diphtheria have been received. Of this number 93 died; 34 within 24 hours after their admission. This gives a death rate of 13.5 per cent., and should I deduct the 34 patients who died before having had time to benefit by the anti-diphtheritic treatment, I should have had a mortality of only 9 per cent. It must not be forgotten, too, that almost all the patients are weak children reduced to a state of anæmia by all sorts of privations, having lived in the midst of the most deplorable hygienic conditions. These are facts which speak loudly in favour of the anti-diphtheritic treatment. Allow me now to give the results of the experiments that have been made, and the marvellous results obtained by the serum treatment, as a preventive against diphtheria. Of 12,426 persons in contact with patients suffering from diphthe-

ria and who were injected with the serum as a preventative measure, 53 only contracted the disease. Is it not to be desired, in the presence of such facts, that every time a case of diphtheria occurs in a family, the children should be immunized by injections of the serum; and the more so as such injections are without danger?

Roux gives the following figures: 128 children suspected of diphtheritic sore throat were injected at an interval of 24 hours with 40 cc of serum, and upon bacteriological examination were found to be non-diphtheritic. These children, who had received a quantity of serum eight times greater than was necessary to immunize healthy subjects, suffered from no untoward results, apart from slight fever, an eruption, and articular pains.

Since diphtheritic patients have been treated with serum, many things have been said against this system of medication; but all the objections to the employment of this method of treatment may be reduced to three principal accusations, which we shall now examine.

1st. The serum does not infallibly cure all cases of diphtheria. Unhappily this is true; but it is the exception, the very rare exception. The physician who cites an isolated case of failure and makes of it a plea against this method of treatment, should take into account the point of intoxication at which his patient was when the injection of serum was made. He should take into account the dose injected and the previous state of health of the child; and almost always he will find the cause of his want of success, in delay in administering the treatment and the insufficiency of the dose injected. Antitoxin acts upon the agents which protect the organism by stimulating them. But, if these agents are so weakened that they are no longer able to receive any impression, naturally the medication will have no effect. It must not be forgotten that antitoxin, while having the power to arrest infection at the point that it has already reached, remains inert against diphtheritic toxin.

2nd. Accidents result from the use of the serum. This reproach is true, but let us review these accidents and ascertain their gravity. Among the most common are cutaneous eruptions appearing about the first day after the initiation of the treatment. Such eruptions are exanthems with or without fever, and often accompanied by articular symptoms. They, as a rule, last about 48 hours and disappear rapidly without leaving any traces. This accident is not peculiar to antidiphtheritic serum. It is common to all serums, and it is not the only therapeutic agent which produces untoward effects of this kind. Yet, is there a single physician who would refuse to employ when necessary the bromide or the iodide of potassium, because they also produce a skin eruption?

Again, the serum has been accused of being the cause of albuminuria in diphtheria. In all diseases of microbial origin there is the production of toxin and therefore elimination of toxin. This toxin, in passing

through the kidney, irritates, inflames, and affects it more or less profoundly. In typhoid fever, in scarlatina, in variola, in all the contagious diseases, we often meet with albuminuria although injections of serum are not given in those diseases. Nephritis, when present in diphtheria, is not the effect of the serum, it is due to the microbic toxin; and to-day if we find, more often than hitherto, albumen in the urine of diphtheritic subjects, it is because we now cure our patients, while formerly they died before albumin could be found in their urine. Only the slight cases recovered before the use of the antidiphtheritic serum.

3rd. The serum has been accused of having caused death. This is a grave statement, and, if well founded, would to a certain extent justify those who object to this treatment. But we must not conclude *post hoc ergo propter hoc*. Facts must be shown, and facts to the point of absolute evidence to convince one that a treatment, which has reduced the mortality of diphtheria to 15 per cent. or even 10 per cent., could be a dangerous treatment that ought not to be employed. A few exceptional cases have been brought to the notice of different medical societies. Moizard, Ausset, Langerhaus, and Variot have reported unfortunate accidents which they unjustly attribute to the serum. I say unjustly because their observations only show one thing, that is that those fatal accidents occurred after the administration of a dose of serum. But that is all that they prove. Allow me to bring to your notice one of these observations and then judge for yourselves the value of the conclusions. Twelve days after having received 20cc of Roux's serum, which cured the little patient of diphtheria, there appeared a general erythema with albuminuria and extreme prostration. To these symptoms was added bronchopneumonia which carried off the child in 11 days. The serum is accused in this case of having put the subject in a condition of lowered resistance, which resulted in his contracting bronchopneumonia followed by death. But why accuse the serum of being the cause of this misfortune? Is it not more reasonable to accuse the diphtheria, which the child had a few days previously, of having caused this lowered condition of the organism? I cannot cite all the reported disastrous results imputed to the use of the serum although they are not very numerous, but none that I have read of give absolute proof that the serum has been the cause of death. Those who rely upon such isolated facts should be asked to give something more than mere affirmation; we demand demonstration, and even though this allegation should be true, should it be considered a reason for abandoning recourse, when necessary, to a treatment that has given such splendid results? It would be quite the same as the abandoning of the use of chloroform, which although it has rendered the greatest benefit to humanity, nevertheless causes death in some cases. Some medical men, unfortunately, hold ul-

tra radical opinions and have thrown discredit upon this method of treatment which has, at least, fairly well established its character for efficacy.

Permit me to close this paper by submitting to you the rule which guides me in the administration of this treatment to the patients confided to my care.

I employ by preference the serum prepared at the Pasteur Institute in Paris, which has given me the best results. When I have before me a patient affected with diphtheria I inject immediately 20cc of serum, and 24 hours after this first injection, if the temperature has not fallen and still more particularly if it has risen, I inject another dose of 10cc or 20cc according to the case. If the case is a specially serious one, 12 hours after the first injection I inject another dose of 10cc or even 20cc. I invariably take as a guide in the administration of a new dose the general condition of my patient, his pulse, and specially his temperature. The local condition gives me no important indication. Thus, if the temperature after the first injection should rise and remain high or else remain stationary instead of falling within 24 hours, I inject every 12 hours or every 24 hours doses of either 10cc. or 20cc. according to the age of the patient and the gravity of the case.

As to local treatment, it amounts to very little. Abundant irrigation with a solution of boric acid every two hours, has a very soothing effect and a marked antiphlogistic action which I consider to be its principal advantage. After each irrigation the patient has a certain period of repose. Peroxide of hydrogen, which I used for a time, did not give so much satisfaction. It irritates and dries up the throat ; and besides the apparatus to be used as atomizer is often a cause of annoyance. When the false membrane extends to the nose I sometimes irrigate with slight pressure ; but, if the irrigation should cause bleeding, I discontinue it, and replace it by an ointment of boric acid and menthol applied to the nostrils every 2 hours. I prescribe stimulants, citrate of iron quinine and strychnine; milk diet; intestinal disinfection; rest in bed until the pulse has become normal. The urine is examined daily.

Such is the treatment followed in the Civic Hospital. If the patients were received into the hospital within 24 hours after the onset of the disease I have such confidence in serotherapy that I believe I may say that almost all the cases could be saved.

One other and a final word. Do you not believe with me that the city of Montreal should have a depot for serum to be distributed gratuitously to the poor upon a physician's certificate, that in fine we should do for cases of diphtheria what we are doing for smallpox ? I believe that by adopting such a system a large number of patients would receive the benefit of the treatment in opportune time and preventive injections could be made, which would greatly diminish the number of victims to diphtheria.

A BRIEF CONSIDERATION OF EMPYEMA OF THE ACCESSORY CAVITIES OF THE NOSE.

BY

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The subject of diseases of the accessory cavities of the nose has been considered in medical literature for over two hundred years, but it is only within this last decade that the pathological anatomy has been thoroughly worked out by Zuckerkandl, Grünwald, Hajek, and other continental teachers, who have thus established a firm foundation and enabled the surgeon to form an accurate diagnosis in such cases.

I do not propose to go deeply into the subject this evening but simply to refer to some of the more important features. When pus is found in but one side of the nose, and after excluding syphilis, tubercular ulceration of the nasal mucosa, and the presence of foreign bodies, the probability is that one or more of the accessory cavities is diseased. Parosmia is a very frequent subjective symptom, the objectionable odour so frequently complained of by such individuals may only be subjective or it may cause offence to others this being dependent upon the amount of destruction present. On examination of the nose, if the antrum of Highmore, the frontal cavity, or anterior ethmoidal cells are affected, pus is usually found in the anterior third of the middle meatus in the region of the hiatus semilunaris and if an accessory opening exists in the inferior meatus, pus will be found in this situation. It will be readily understood if one will only bear in mind the normal openings of these three cavities why pus should appear in this situation, for the aperture of the maxillary antrum is situated in the posterior part of the hiatus semilunaris under the anterior end of the middle turbinal. The most constant opening of the anterior ethmoidal cells is situated between the ethmoidal bulla and the anterior insertion of the middle turbinal, that of the frontal cavity in its most dependent part, and leads into the nasofrontal duct which opens into the uppermost part of the hiatus semilunaris. The diagram below shows clearly the respective openings of the frontal, anterior ethmoidal, and the antrum of Highmore.

The opening of the posterior ethmoidal cells is in the spheno-ethmoidal recess and that of the sphenoidal cavity in its anterior wall. The size of the latter opening varies but is always situated in the anterior wall, the distance of the aperture from the anterior nasal spine being

* Read before the Montreal Medico-Chirurgical Society, February 6, 1899.

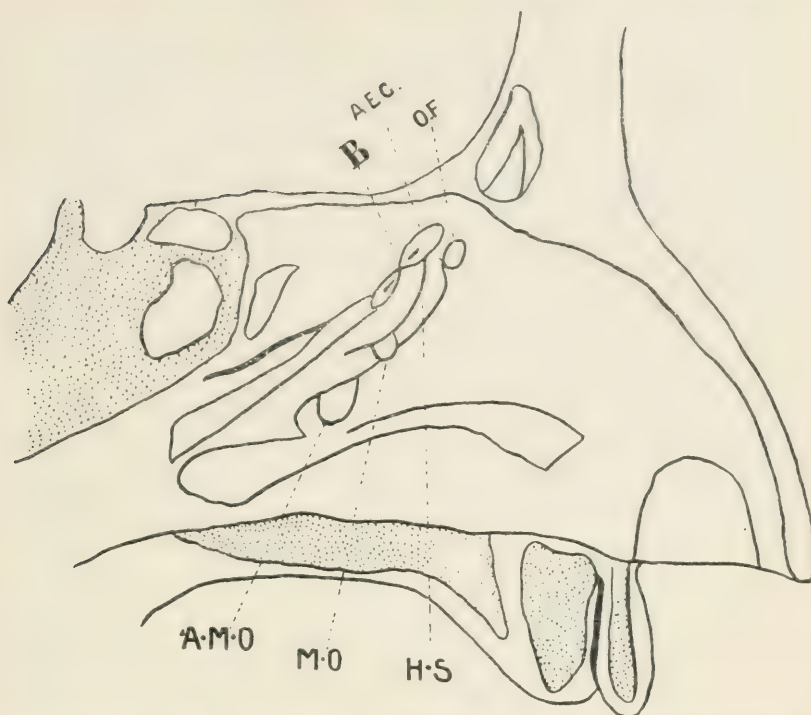


Diagram showing the left lateral nasal wall after resection of the inferior and middle turbinals.—(From Zuckerkandl's *Anatomie des Nasenhöle*.)

- O. F. Inferior opening into naso-frontal duct.
- A. E. C. Opening into the anterior ethmoidal cells.
- B. The ethoidal bulla.
- H. S. The hiatus semilunaris.
- M. O. The maxillary opening into Highmore.
- A. M. O. The accessory maxillary opening.

from 8 1-2 to 10 centimetres in the male and 7 1-2 to 8 1-2 in the female.

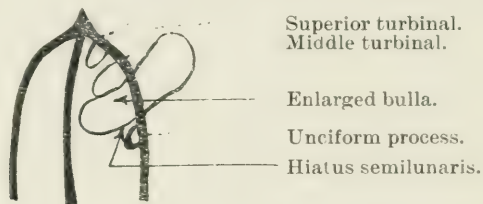
Pus originating from either of the above cavities appears between the posterior third of the middle turbinal and septum, or in the choanal or vault of the pharynx, frequently appearing in the form of dry crusts in the last named situation.

Empyema of the nasal cavities is often accompanied by swelling of the nasal mucous membrane particularly that portion which covers the hiatus semilunaris, the unciform process, and the inferior and outer surface of the middle turbinal. Grünwald considers that a polypoid condition of the middle turbinal is always indicative of empyema of one or more cavities, but Schmidt's, Chiari's and E. Frankel's observations do not confirm Grünwald's assertion.

The frequent symptoms of referred pain in the so-called cases of facial

neuralgia, is often caused by pressure of the secretion in the antrum upon the branches of the trigeminus ; and in closed empyema, as the result of the accumulation of secretion, distention of the walls of the cavity often occurs. The cavity of the antrum in such cases becomes round in form, and if the tension is not relieved, bulging of the inner or anterior wall is noticed, or there may be bulging over the hard palate, recognised by the presence of a soft fluctuating tumour situated at the roof of the mouth. Further observations must prove whether the cases described by Weichselbaum, Grünwald, Manchot and others, in which peritonsillitis and perichondritis of the thyroid cartilage were associated with empyema of the antrum of Highmore, were caused by a direct infection from the latter cavity ; or whether these localized inflammatory areas were local manifestations of a general infection.

On examination of the nose in cases of closed empyema of the ethmoidal labyrinth one frequently finds dilatation of the ethmoidal bulla and atrophy of the middle turbinal due to pressure upon it by the enlarged bulla as shown roughly in the accompanying diagram.



The bulla is sometimes congenitally dilated, but in such cases both bullæ participate in the enlargement. Again, the middle turbinal may become enlarged and present a bowl-shaped appearance. Such enlargement must be differentiated from the condition first described by P. Helyman, in which an isolated ethmoidal cell, frequently found in the anterior third of the middle turbinal, becomes dilated owing to occlusion of its duct. And, finally, when the whole ethmoidal labyrinth is diseased complete dilatation of the inner wall may occur. In such cases a tumour will be found which fills up the olfactory portion of the nose causing deviation of the septum to the opposite side and with its resulting symptoms.

A very suggestive external symptom of distention of this cavity is displacement of the eye downwards and outwards, due to pressure of the paper plate upon the tissues of the orbit, or rupture of the plate and evacuation of the contents of the cavity into the orbit. The possibility of the infection of the meninges by the blood current or by rupture of the cribriform plate must not be overlooked. When there is occlusion of the naso-frontal duct with accumulation of secretion within the frontal cavity, dilatation, if it occurs, usually appears at the inner angle

of the eye or upwards and outwards at the base of the nose. Dr. Carl Theodor of Bayern, Germany, reported a case in which the bulging appeared at the inner angle of the eye and was of a hard ivory-like consistence, and it was not until after operation that empyema of the cavity was recognised. Meningitis is not an infrequent sequela of closed empyema of this cavity.

Very little is known regarding the symptoms of distention of the walls of the sphenoidal cavity, but pressure on the optic nerves, which lie on either side of the cavity, may be followed by atrophy and consequent limitation of the field of vision. It is also possible for perforation to take place through the vault of the pharynx in such cases.

One could enumerate many other evil effects caused by empyema of the nasal cavities but those mentioned will suffice to impress upon the practitioner the importance of an early diagnosis.

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Clinical Lecture.

TUBERCULOUS DISEASE OF THE SPINE, COMMONLY CALLED CARIES OF THE SPINE, ANGULAR CURVATURE, OR POTT'S DISEASE.

BY

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GENTLEMEN :—The disease which I have to discuss to-day is called “Pott’s Disease” because it was first accurately described by Percival Pott of St. Bartholemew’s Hospital, in 1779.

My first illustration is an adult, whom I have selected because she is not nervous and will lie quietly without making any disturbance. In her, you see a fairly good example of Pott’s disease of the lower dorsal region, involving the last dorsal and the first two lumbar vertebræ. These three vertebræ stand out quite prominently, particularly the middle one. This is a good example of angular curvature.

The *age* at which Pott’s disease is found is, usually, up to the tenth year,—you may from the third to the tenth;—a few cases have been seen earlier than that. Mr. Howard Marsh has reported a case at the tenth month, and other cases at a year and under. On the other hand, you find illustrations of Pott’s disease at the opposite extreme of life, and cases are reported at sixty, sixty-one, and sixty-four years. It is well to bear in mind the occurrence of the disease at the extremes in age, in order that the symptoms may not be allowed to pass unrecognised when appearing in infants or old people. The great majority of cases, however, occur from the third to the tenth year.

In the matter of *sex*, in this period of life the sexes are about equally represented. You know that boys and girls, up to about ten years of age, enjoy about the same amusements, romp and play, climb fences, and get tumbles, about equally; and there is not much difference in the frequency of the disease in the two sexes at that time of life.

With regard to the *etiology* of the disease. Pott’s disease is always tubercular. There are, however, other pathological processes occurring in the vertebræ. Angular curvature may be due to traumatism alone, or there may be curvature due to osteitis, and softening from pathogenic organisms, not tubercular. These cases are generally rapidly cured.

Then again, it may be due to syphilis, either hereditary or acquired. This disease is more frequently observed in the upper cervical region, is rapid, occurs later in life than tuberculosis, and is more easily cured. And lastly, it may be due to malignant disease of the bones of the spine. These possible conditions should be remembered as checks to help in a correct diagnosis. When we speak, however, of Pott's disease or angular curvature, we always mean tuberculous disease of the spine.

In the majority of cases the disease is located in the dorsal region. Parker gives the following figures:—cervical, 9; dorsal, 82; dorso-lumbar, 21; lumbar or lumbo-sacral, 37; out of 149 cases.

The part of the vertebra first attacked is, as a rule, the anterior part of the body. In children, each vertebra has an epiphyseal plate on its upper and lower surface, and in many cases the disease begins as a juxta-epiphysitis. So far as I know, there are no cases reported as occurring in the articular processes, these are very firm and hard, but occasionally the spinous processes are involved. Then, the disease may begin near the posterior surface of the body, and the extrusion of bone may press backwards on the membranes of the cord. A statement is sometimes found in the text-books that the disease may begin in the inter-vertebral substance. Close observers, writing with considerable experience in the autopsy room and with large museums to inspect, say, that it must be considered very doubtful if the disease ever does begin in the inter-vertebral substance.

The *course of the disease* varies a good deal with the circumstances of the case and the resisting power of the patient. It may go on to form a tubercular osteitis with more or less breaking down of the bone and absorption of the inflammatory material as fast as it is produced; a variety known as *caries sicca* and ending without the formation of an abscess. The same thing occurs in the hip joint and knee joint. In this variety, too, there is sometimes more than the usual amount of pain.

In a considerable percentage of cases the formation of large or small *abscesses* occurs, their size and future course depending upon the amount of the disease, the resisting power of the patient, and the treatment adopted. The direction taken by an abscess arising from caries of the vertebrae is determined by the contiguous fasciæ. In the neck, for instance, the cervical fascia passes from the spinous processes, investing the trapezius, to the posterior border of the sterno-mastoid muscle where it splits and unites again in front. A cervical abscess may get in front of this fascia and pass into the mediastinum or form a post-pharyngeal abscess. In the dorsal region, an abscess may pass into the pleura, occasionally perforate the lungs, or pass between the posterior ends of the ribs and between the transverse processes, and, following up the posterior branches of the intercostal arteries, appear on the back. In the lower

dorsal region the abscess, instead of passing back between the ribs, occasionally goes down the spinal column, and passes beneath the ligamentum arcuatum internum into the psoas sheath. Occasionally, it passes down behind the anterior common ligament and pierces the diaphragm. In the lumbar region, the abscess may pass down right on the bone, and then down behind the vessels and beneath the iliac fascia and form an iliac abscess; or, it may pass into the pelvis and appear at the sciatic notch. The sheath of the psoas is attached to the vertebrae internally, and in front is continuous with the ligamentum arcuatum internum above and the iliac fascia below, and behind is continuous with the anterior lamella of the lumbar fascia. The lumbar fascia consists of three layers, the posterior arising from the spinous processes and the two anterior layers from the transverse processes. The quadratus lumborum lies between the anterior two layers. The middle layer gives origin to the internal oblique and transversalis muscles. The anterior layer is very thin and is frequently perforated by abscess. Again, behind the posterior border of the external oblique is a weak point called the triangle of Petit, bounded in front by the posterior border of the external oblique and below by the crest of the ilium. A lumbar abscess sometimes points in this situation.

Now, the *symptoms and diagnosis* of this condition are the next points to be considered. The result of spinal caries is deformity, and deformity is sometimes the first thing you are consulted for by the parents. It is well shown here in this case before you, but in every case it may not be so easily recognised at first. The deformity depends on the collapse of the bodies of the vertebrae which are diseased and soft and give way beneath the weight of the head and shoulders. When the deformity occurs high up there may be a displacement of the viscera, from the alteration in the shape of the cavities, due to the bending of the spinal column. If it is in the dorsal region, the chest may be encroached upon, the lungs depressed, and the abdominal viscera pushed down. Sometimes the head is thrown back, the back is raised, and the apex of the heart is found in the third space.

The next symptom we have to deal with is compression paraplegia. You might think at first that this compression paraplegia would be due to bone pressure on the cord. That, however, is not often the case; the paraplegia is as a rule due to granulation tissue and pachymeningitis. The disease extends back from the body of the vertebra into the vertebral canal, granulation tissue forming and being pushed back through, and pachymeningitis develops. Occasionally the disease may extend through the thickness of the bodies and the granulation tissue be pushed back when they begin to collapse from the superincumbent weight. On

the other hand, the tubercular disease may soften the bones and enlarge the vertebral canal and that is why we do not have paraplegia occurring more often ; under these circumstances there is more space for the cord than normally exists.

We may also have an abscess or a spicule of bone or sequestrum pressing back against the cord ; and occasionally the pressure may be due to hemorrhage. In the latter two alternatives the onset of the paralysis would be sudden, as a rule, however, it is due to granulation tissue, and the onset is gradual. Compression paraplegia is generally complete and bilateral. In one case, which is pretty well cured now and which I will show you, there is still paresis. In a man discharged recently there was a complete paraplegia both motor and sensory; yet he is cured of the paraplegia and is pretty well and went off the other day in very good form. In compression paraplegia the muscles generally waste. The reflexes in the earliest stages are sometimes greatly increased, but when the paraplegia becomes complete, the reflexes, both superficial and deep, are abolished. The circulation is poor and often the limbs are cold and the skin is covered with a profuse sweat. In syphilitic disease and cancer of the spine, or in the case of a spicule of bone as the cause of compression, one side only may be involved.

These cases occur particularly in children and very infrequently do we have an opportunity of making a diagnosis at the very earliest stage. Too often, when the child is brought to us, the diagnosis is only too easily made. The earlier symptoms should be borne in mind and each case should be examined thoroughly. The first thing that the mother will say, as a rule, is that the child is easily tired, and perhaps is awkward. The child trips and stumbles about and is not active on its feet, is easily tired and irritable and sometimes may complain of pain. In cervical disease, we occasionally have neuralgic pain extending up the back of the head, pain which is referred to the region of the sternum, or pain simulating an intercostal neuralgia. In dorsal, there will occur colic and, perhaps, signs of gastric crisis, or the pain will run down the legs, involving the nerves of the lumbar or sacral plexus.

When these symptoms and the feeling of being easily tired are present, you should strip the child and examine it thoroughly and methodically, as in a case of hip disease. You should put a skirt upon the hips so that you can get the whole body and chest exposed for examination. In the first place make a thoroughly careful inspection. See if the spines of the vertebræ are all straight in line and if any one of the vertebræ stands out more prominently than it should, remembering the normal prominent spine. Put your hand on the spine. In bending, it yields regularly and evenly and equally, beneath the hand ; then, when the

child straightens, the bones come gradually and proportionately into place. A good way is to ask the child to pick up something. (The only child I could use for this purpose to-day is so fretful I cannot bring it in.) If you drop a cent on the floor the child that has spinal disease will bend first the hip and then the knees, in reaching for it, and then get up again in the same way. This is characteristic of what Sayer used to call a muscular splint already applied to the diseased spine. This rigidity can also be demonstrated by taking the child across one's knees and letting the head fall one way and the legs the other. By approaching the knees and thereby increasing the deformity there may be, in severe cases, apparent difficulty in breathing, and pain, both being relieved by separating the knees and straightening the child's back.

Next, examine for irregularities and tender points. Often you will get a history of traumatism in these cases combined with the tubercular disease. Rickets should not give much trouble in diagnosis. Rickets does not cause angular curvature but more of an arch, which straightens out when you lift the child up, while the other is permanent. This simple test is generally enough to enable you to eliminate rickets.

The hysterical spine in young ladies is sometimes troublesome and you have to be a little guarded in your opinion. I think Paget's description of it is unsurpassed. In the first place, there may be, and very often are, several tender points instead of one. Secondly, the pain is exaggerated. Thirdly, if you only touch the skin the patient will complain more loudly than if you put your hand firmly upon it. This is a pretty good test. Then, again, if you distract the patient's attention you can press quite hard, unless she happens to remember what you are doing, without causing much pain. The absence of deformity will help you. The patient will bend her back and turn over, which she could not do if she had tubercular disease. With attention to these points you will generally be able to diagnose correctly.

What is the the *prognosis*, in the first place as to life, and in the second place as to deformity ? Now, in making a prognosis bring all your wisdom into play. You cannot learn a rule of prognosis the way you learn a rule in arithmetic. You have to consider, first and foremost perhaps, the situation of the disease, its extent, the number of vertebræ involved, and the length of time the disease has been going on. Then, take into serious consideration the personnel of your patient. We have always two forces at work, the enemy, which is the disease due to a bacillus: and we have the patient,—we have the resisting recuperative power to meet that attacking germ. And in estimating that you have to consider the family history and the social condition. I suppose in very considerably over half the cases, 68 per cent., it is estimated at, there is a family history of tuberculosis. If it is a strong history it will make

you form a graver prognosis than if there was no tuberculous disease in the family. Then, if the patient is in a condition to procure fresh air, careful nursing, and braces and jackets when required, the prognosis will be very much better than if the patient, from poverty and the carelessness and indifference of parents, is not likely to get proper care. As a rule, with a fairly good family history and the means and disposition to get good treatment, the prognosis is very good for life; and, with careful treatment, I think it is very good as regards the deformity. Sometimes the deformity can be somewhat lessened only; but, if you are careful and circumstances are fairly well on your side, you can prevent the increase of the deformity to any great extent. (This patient required treatment for a good while.) How long it will take, you cannot say, but you are generally safe in assuming about three years; sometimes a little shorter and sometimes a good deal longer, depending on the complications and other circumstances.

The *cause of death* in these cases varies. It may be suppuration, abscess, infective abscess leading on to septicæmia and pyæmia; or lardaceous disease of the liver and kidneys. Very often it is general tuberculosis, tuberculosis of serous membranes, or tuberculous meningitis. The resisting powers being lowered, the patients frequently succumb to a pneumonia or other intercurrent disease.

With regard to the *treatment* of which there is a good deal of difference of opinion and a great many different methods. I will tell you what I think about the treatment of these cases. In the first place, of course, I will assume that you put these patients under the best hygienic surroundings possible, and that you give them the most nutritious and suitable diet. If you can, give them mountain or sea air, etc. I am very strongly in favour of the recumbent position in the early stage of both spinal disease and hip disease, and every year, although I have sometimes tried to get on the other side, I find myself more and more confirmed in this idea. The success attainable by treatment with apparatus will depend a great deal on where the disease is situated. Often, it is situated low down, and here, perhaps, you can do more in the way of holding the patient up with apparatus; but I say, with all due deference to other people's opinion, that I am not yet convinced that it is possible to apply an apparatus which will carry the upper part of the body and relieve it from pressing on the diseased area. And that is where the mistake is made, that is, that even the best apparatus only brings the weight back on to the lateral masses. I will bring a child in here to whom a plaster jacket was applied two or three days ago. Many of you here saw it put on. Now, you can put your hand inside that jacket, and it is evident that it does not carry the patient's weight, it only keeps it from coming forward. One cannot carry patients in this manner. One cannot

put crutches under their arms that will carry them without excoriation and pain. In the cervical region one cannot put on a harness that will hold the head up. Apparatus will prevent the vertebræ from collapsing and coming forward, and in that way throw the weight on the lateral masses which are very seldom affected by tubercular disease. That point is being brought out more and more every year. Noble Smith has written a book to expound that very principle and has figured what he calls his splint for pressing forward the back, holding back the shoulders, and throwing the weight on the lateral masses; and I think it is a very important point in the treatment.

I believe, in the early stages, in putting the patient in bed. By so doing perfect rest is obtained and the best means afforded of preventing the increase of the deformity and limiting the extent of the disease. If you can get a bright sunshiny room you can put a child in bed for nine months or a year, and it will get fatter and fatter every day. You can take the child out on the lawn in summer and under the trees, and give him all the change necessary. Rest in bed alone is not sufficient, as it permits turning about and twisting. A fixation apparatus is required in addition; a 'Thomas' splint, or one of these frames of gas-tubing filled in with canvas, answers very well. Extension may be applied, if required, to either the head or the legs or to both. The child is placed on the frame with a band over the chest and one over the pelvis. It can then be moved from one room to another or carried out to the lawn without disturbing the position. Or, the child may be put in a plaster jacket, head, shoulders, body, and both limbs. Keep them quiet by one or other of these means for eight or nine months, or until the disease has ceased to be progressive and the pain is gone. Then, when the diseased spine seems to be more fixed, less pliable, and less movable, begin to take more liberty, and finally adopt the ambulatory treatment. This consists in the application of plaster in the manner you saw the other day; the man has now left the hospital. A very nice easy way of applying plaster to children is by stretching them out on a hammock in the horizontal position as was done in this case. (Child shown.) A better way still is to take a plaster cast like this one, remove it and send it to the instrument maker. He will make a mould from the cast and over that mould will fit one of these jackets. (Shown). This one is made of paper and, I understand, is patented. It is very light, and Mr. Chapman tells me, only weighs 14 ounces. Or, it may be made of leather and then will weigh a little more. The great objection to these is their expense, the leather ones costing \$35.00, a sum of small moment to some people but beyond the reach of the majority of our patients.

Dr. Hadra, of Chicago, has recently advocated immobilization of the vertebræ by wiring the spinous processes together. He cuts down and

exposes the processes and wires from two or three above to two or three below the point of disease. He described his method in a paper read before the American Orthopedic Association and published in their last annual volume, but, in the discussion which followed, serious objections were raised against it. In the first place, a considerable wound is made, and in the second place, the wire would probably cause erosion and possibly necrosis.

The latest method of treatment is that, introduced by Calot, of immediate forcible straightening. You are all familiar with it I suppose. Dr. Wilson has been carrying it out here in a considerable number of cases, generally under ether. Parker, and Goldthwaite of Boston, have done it without ether. The straightening should be preceded by a pretty thorough purgation to facilitate the manipulation by the hand placed on the abdomen. With one hand placed over the spine behind and the other in front the curvature is straightened by pressure. After straightening the part, one at once immobilizes with plaster of Paris. This may be done in many cases without ether, and of course, very easily under ether. The method is very new and also very old. Hippocrates, writing 500 years before Christ, describes the same treatment carried out in a rough manner by letting the patient drop, from a ladder. He wrote that he did not think much of it himself and never practised it. Enough cases have been done in France, England, the United States, and here in our own clinic, to satisfy every one, I think, that it can be done with impunity. No harm comes from it; these children do not get meningitis, they do not get abscess, they do not get general tuberculosis, they do not get hæmorrhage, or fever, or paralysis. Paralysis, if present, is relieved by the operation, and the parents are delighted with it. It is, at first, thoroughly satisfactory, of course in selected cases. I do not think it would be advisable to attempt Calot's method in these cases, because the curvature is considerable, several vertebræ are involved, and the gap left would be too great and probably never fill in. The whole question is how to fill up the gap. Tubercular disease of bone is very slowly repaired, but a little more rapidly in the vertebræ than in other joints. Here, I can get rid of the lump and deformity by rapidly straightening it out and it will be just the same to-morrow as to-day, but I should create a gap and how to fill this in and secure bony ankylosis is the whole problem. I think years must elapse before we can pronounce finally on this very radical method and learn what cases are suitable for it. Let us hope, for the sake of the patients and ourselves that the results will justify the advocacy of the treatment. In case, however, you should be too enthusiastic about it, I will simply refer to two autopsies reported by Mr. Murray, of Liverpool. The first was a boy four years of age who was brought to him with disease in the lower dorsal region of three

years standing. There was no abscess and no paralysis. He straightened the disease under ether. In ten days the child went home seemingly in first rate condition. Two months later he died from pneumonia, and at the autopsy there was no evidence of repair,—in fact there seemed to be a sort of false joint formed at the point of the disease. The pneumonia was not thought to be due in any way to the straightening of the diseased spine. The second case was a girl three and a-half years of age, who had had the disease for two years in the upper dorsal region. Mr. Murray straightened it and the child went home in ten days in good condition. It died three months later of meningitis and general tuberculosis. The family history was not good, and Mr. Murray does not think that the operation contributed to the general tuberculosis or meningitis. But, at the autopsy, there was no evidence of repair and the spine was freely movable, not firm nor fixed. That, perhaps, was not a good example and not a good patient, but I think, in putting the subject before you, that it is only right to present both good and bad results and to show that it is not yet proven that the gap is filled in. Calot's treatment, however, may be found to be followed by satisfactory results when applied early, before there is much deformity, but time alone will demonstrate how far this procedure will contribute to a more successful issue in this form of tubercular disease. I have dwelt so fully on previous occasions, upon the treatment of abscess in Pott's disease, that I need not discuss that question again to-day.

Case Reports.

TUBERCULAR MENINGITIS.—LUMBAR PUNCTURE.

TUBERCLE BACILLI IN THE FLUID REMOVED.—PUNCTURE FLUID INOCULATED INTO GUINEA-PIG PRODUCING GENERAL MILIARY TUBERCULOSIS.

BY

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E. B., female, 10 years of age, entered the Montreal General Hospital on May 28th, 1898. She had been out of sorts for three weeks, and though by nature a bright vivacious child had since that date become listless and lost her usual appetite. There had been at first some numbness of the fingers and lips, and in a day or two vomiting and headache. About the fifth day of her indisposition she had a series of general convulsions, recurring during two days and two nights. The bowels were obstinately constipated and moved only by purgatives. Her parents said that after the convulsions she had been delirious for a week, and had then become quite drowsy, had cried out occasionally during her sleep and had become very thin. There was no history of tuberculosis in the family.

Note made on admission:—

Very much emaciated; lies upon her side with the legs drawn up; there is marked retraction of the head, the abdomen is scaphoid, and the *tache cérébrales* is easily produced. The lids are half closed, the right pupil is dilated, but there is no strabismus. The child is stuporose, takes no notice of its surroundings and cries peevishly when roused to take nourishment. She mutters a good deal but there is no cry. There is retention of urine. Pulse, 108 : Respirations, 28 : Temperature, 100° F. The lymphatic glands are not enlarged. There is no evidence of tuberculous disease of the bones or joints.

Respiratory system :—The lungs are clear on percussion and auscultation.

Circulatory system :—The cardiac dulness is within the natural limits and there are no murmurs. The pulse is rapid and small and shows considerable irregularity in rhythm.

Digestive system :—The tongue is moist and coated. Beyond the re-

tracted condition of the abdomen, there is nothing specially noteworthy in the abdomen. The spleen and the mesenteric glands are not palpable.

May, 30th :—The temperature ranges from 98.4° F. to 101° F., the pulse is 140, the respirations 32. Both pupils are widely dilated. No gross changes in the fundi. Lumbar puncture was performed about 1 p. m., and 20 cc. of an almost perfectly clear straw-yellow fluid were obtained. The whole of the fluid removed by puncture was injected subcutaneously into a guinea-pig. The child appeared to be quieter after the puncture. At 5 p. m., she became suddenly cyanosed and remained so for an hour.

May 31st :—A second puncture was made this afternoon between the third and fourth lumbar vertebræ, and 10 cc. of a similar fluid were obtained. This was centrifugated and the sediment was examined microscopically. There were no pus cells found, but a few blood corpuscles and a number of cells resembling lymphocytes, i. e., with large, round, deeply-staining nuclei and very little protoplasm. Cover-slip preparations were made, stained with carbol-fuchsin and decolourized with Gabbet's blue. In three slides five typical tubercle bacilli were found. One hour after the puncture the child became cyanosed, but this passed off as before.

June 1st :—The patient is quite unconscious. Death occurred at 5.15 p. m. An autopsy could not be obtained.

The guinea-pig, into which the cerebrospinal fluid from the first puncture had been injected on May 30th, began to get thin and to show signs of weakness two weeks after the inoculation. It was killed on June 30th, and the post mortem showed an acute miliary tuberculosis. Tubercle bacilli were found in all the organs.

RETROSPECT OF CURRENT LITERATURE.

Medicine.

UNDER THE CHARGE OF JAMES STEWART.

Treatment of Cardiac Dropsy.

BORGHERINI "Die Mechanische Behandlung der Oedeme bei Herzkrankheiten."—*Deut. Arch. Klin. Med.*, Bd. 61, 624.

The treatment of high degrees of dropsy in cardiac disease not yielding to ordinary measures is beset with considerable difficulties. Various mechanical appliances have been employed and are certainly efficacious in removing fluid from the legs. The best known is perhaps Southey's tubes, but simple puncture is also efficacious. The great drawback to such plans of treatment is the danger of septic infection leading to diffuse cellulitis, and suppuration of the subcutaneous tissues. Experience shows that such accidents are but too apt to follow the introduction of metallic tubes and their retention in oedematous tissues, even when strict antiseptic precautions are adopted.

Borgherini has modified an old method of dealing with the cases in question which promises to be of considerable value. After carefully cleansing the legs as if for a surgical operation, four incisions are made in each limb, one at each side of the malleoli and two in the calf. Each incision is two or three centimetres long and reaches the subcutaneous tissues. The wounds are covered with aseptic gauze and a thick layer of absorbent cotton, and over this a sheet of rubber and bandage. The rubber is applied so that a small part of the heel is uncovered. The patient sits on the edge of the bed or on a chair with the feet down, and the fluid drains away into a basin under the uncovered part of the heel. The dressings on the limb are changed every twenty-four hours. The duration of the treatment varied from twelve to eighteen days, and after the fluid had drained off the wounds healed readily. A remarkably large quantity of fluid sometimes escapes and the method is applicable for renal as well as cardiac dropsy.

By this method an excellent result was obtained in a case of heart dis-

case with anasarca of the legs and abdomen and gangrenous erysipelas of the legs, the result of a cantharides plaster. There was also fever, diminished urine, and congestion of the liver and lungs. As the usual remedies, including purgatives, proved of no avail, and as the erysipelas was spreading, incisions were made as described above. In three days the erysipelas was arrested, œdema and ascities diminished, the urine increased, the pulse improved, and the dyspnoea diminished. Unfortunately suppuration set in about a finger nail, the cardiac conditions became aggravated, and death ultimately occurred. In three other cases improvement resulted from a similar method of treatment. Untoward effects seldom occur and are not of much moment. This plan of treatment is naturally not one to be used indiscriminately and it is unnecessary unless the usual methods have failed.

Borgherini regards the œdema of heart disease, not only as a mechanical obstacle obstructing the peripheral circulation, but also as acting as a reservoir for toxic substances which collect in the system owing to the lessened activity of the kidneys and which exert a deleterious action on the heart. Although no evidence in favour of this view is adduced, we are reminded of Eichhorst's observations in which somnolence and delirium with other nervous manifestations appeared during the rapid disappearance of dropsy, and which he believes result from an auto-intoxication occurring during the passage of the dropsical fluid through the blood.

This method of treatment may thus be regarded as a distinct therapeutic measure for removing toxic substances from the system as well as for alleviating the distress and mechanical obstruction resulting from the collection of large quantities of fluid in the tissues and serous sacs.

Thyroid Extract in Obesity.

EBSTEIN. "Bemerkungen über die Behandlung der Fettleibigkeit mit Schilddrüsenpräparaten."—*Deut. Med. Woch.*, 1899, 1, 2.

In this article Ebstein discusses the use of thyroid extract in the treatment of obesity. A reference to the more important contributions to the subject indicates a considerable diversity of opinion as to the effects of the remedy. Yorke-Davies found the body weight in obesity decreased much more rapidly when thyroid was used with a restricted diet, than when a dietetic plan was exclusively followed. This opinion is in the main confirmed by Lichenstein and by Wrudelstadt. Both these observers found a remarkable decrease in weight especially in anæmic obesity with the use of thyroid alone. In a few instances toxic symptoms were observed consisting in pains in the back and extremities, loss of appetite, palpitation and tremor.

Ebstein details his personal observations in seven cases. In two, the remedy had no effect in decreasing the weight, and two cases were un-

suitable. In the remaining three, when thyroid was prescribed, a decided decrease took place amounting to six pounds in a week in one case, with a decrease of one and a-half pounds in the following week and an increase of half a pound in the third. Further dosage produced no definite results although subsequent dietetic treatment proved more effectual. In the other two cases the loss of weight with thyroid was less marked.

Admitting that a loss of weight results in certain cases of obesity from the use of thyroid, it by no means follows that this remedy is a suitable one in such cases. It must be shown that the loss of weight results from the loss of fat and not of albuminous substances. According to observations of Magnus Levy an increased destruction of albuminous substances goes on with the use of thyroid extract so that this condition is not fulfilled.

Elbstein believes that the only rational treatment of obesity is by diet and in a properly regulated mode of living. He points out that the loss of weight with thyroid is inconstant and ceases after a short time, as in the case quoted. There is, again, no improvement in the general condition of the patient, such as is observed when the weight is reduced by a suitable diet. In addition to the danger of unpleasant symptoms from overdoses of the gland remedy, this remedy is not required, as by our present methods of diet the condition can be controlled.

The readiness with which the public take to remedies is a danger which has already been observed in the use of thyroid, and much harm may result from the indiscriminate use of such a powerful remedy. There can be no doubt that when the patient exercises sufficient selfdenial, a more satisfactory and permanent result comes from the use of a judiciously selected diet.

F. G. Finley.

Obstetrics and Diseases of Infants.

UNDER THE CHARGE OF WILLIAM GARDNER.

Induced Abortion.

PINARD, ADOPHE. "De l'Avortement Médicalement Provoqué, ou Avortement Thérapeutique."—*Annales de Gyn. et d'Obstetr.* January, 1899.

Professor Pinard of Paris in a communication made to the Congress of Gynæcology, Obstetrics, and Pediatrics, at Marseilles, issued the following dictum:—"The indication for induced abortion does not exist any more than the indication for embryotomy on the living *foetus* at term, in cases of pelvic deformity, no matter what the degree, form, or nature of the deformity." He considers that symphysiotomy or Cæsarean operation is the only therapeutic means to which recourse may be had in the case of a woman whose deformed pelvis does not permit of the passage of a *foetus* at term.

Pinard considers that pelvic deformity *per se* does not in any way endanger the life of the mother during the period of gestation. He also draws attention that, as a rule, the children in cases of pelvic deformity reach a greater development by term than is met with in ordinary cases; he quotes Olshousen as having reported several cases noting the same fact.

Pinard refers to the statistics of the Cæsarean operation as reported by Olshousen and Zweifel at Moscow, as follows:—Olshousen reported 27 operations with a mortality of but two mothers none of the children having perished. Zweifel reported 55 operations with but one maternal death. Leopold's results in a series of 100 cases are quoted as follows:—Seventy-one conservative Cæsarean operations with 64 recoveries and 7 deaths. Twenty-nine Porro operations with 26 recoveries and 3 deaths. Breisky's report of 11 successful Porro operations is also quoted. In view of these results, Pinard considers his conclusion as stated above to be justified. He quotes three cases to show that even considerable apparent narrowing of the abdominal cavity existing in cases of marked vertebral deformity does not call for the induction of abortion, all the three having been successfully delivered at term by means of the Cæsarean operation. In extreme cases of this kind he admits that abortion may be indicated and he quotes a case in point; that of dwarf (rachitic), aged 24 years whose height was only three feet seven inches (1.1meters), who refused the Cæsarean operation.

Pinard considers that abortion may be induced in the following con-

ditions only :—Toxæmia resulting from renal or hepatic insufficiency, uncontrollable vomiting, exceptionably, retroversion with impaction of the gravid uterus, and goitre. To these he adds certain conditions associated with severe hæmorrhage. In these cases the operation is only indicated when it is certain that the life of the mother is in danger for then the physician endeavours to rescue the only life for which safety is possible. Pinard states that in these cases the accoucheur “does *not* sacrifice the fœtus but he saves the mother.” The fœtus is already condemned by the probable death of the mother, and the operation *saves* the mother as without intervention both are condemned.

In reference to the diseases which may develop in the mother in the course of gestation, he propounds the following question:—“Will any complicating disease terminate more satisfactorily if pregnancy be interrupted ?” His answer is as follows:—“As a result of my reading and of my observation I do not hesitate to reply ; *No*.”

Pinard concludes as follows:—

“(1) The interruption of pregnancy before the viability of the fœtus, (*l'avortement provoqué médicalement*) constitutes in carefully selected cases a procedure as powerful as it is valuable : (2) The indication for the therapeutic procedure is not present in either cases of narrowness of the pelvi-genital canal, nor in disease of any kind concurrent with pregnancy : (3) The true indication only exists when it is certain that gestation itself is the sole cause of the symptoms which endanger the life of the mother: (4) In inducing abortion under these circumstances the physician does not *sacrifice* the fœtus,—*fatalement condonné*,—but he frequently saves the mother.

Walscher's position.

PINZANI. “Walscher's Position.”—*Monatsschrift für Geburt, und Gyn.* Bd. IX. Hft. I. 1899.

At the October meeting of the Italian Obstetrical and Gynæcological Society in Turin, Pinzani communicated the results of a study of the effects of Walscher's position in increasing the conjugate diameter of the pelvis. He examined 61 living women and three dead bodies and concludes that Walscher's position gives a distinct advantage over all others in flat and generally contracted pelves where the fault lies at the pelvic brim. The employment of this position will render recourse to forceps and turning less frequent, and in the higher grades of pelvic contraction its use will reduce the number of symphysiotomies. In difficult high forceps operations, breech extractions, and symphysiotomies, its employment will markedly facilitate delivery. The perineum is also less apt to be lacerated as the line of traction, as regards the pelvic brim, is more forward, so that pressure on this part by the handles or traction rods in forceps operations is avoided.

Interlocked Twins.

LEISSE-DUISBURG. "Collision von Zwillingen."—*Monatsschrift für Geburt. und Gyn.*, Bd., IX., Hft. I, 1899.

Leisse-Duisburg reports a case of twin pregnancy where in labour the head of the second child descended in advance of that of the first, which presented by the breech and whose body was easily extracted. After considerable effort he succeeded in pushing back the second head and completing the extraction of the first child.

A lively discussion followed the reading of the paper in which several prominent men took part. Alfeld said that as a rule the head of the second child must first be extracted either by forceps or perforation, before the first child can be delivered. Schröder stated that to attempt to shove back the head of the second child and draw on the body of the first was useless; the second head must first be delivered and then the other will follow. Spiegelberg stated that on one occasion he had been able to push back the second head and deliver the first child, but that as a rule he agreed that it was better to deliver the second head before attempting to draw down the first. He quoted Kleinwächter in Eulenburg's *Cyclopædia* in support of this view.

Orthoform for Fissured Nipples.

MAYGRIER and BLONDEL. (*Bul. et. Mem. de la Soc. Obst. et Gyn. de Paris*, November 10, 1898.) *British Med. Jour. Epitome*, January 28, 1899.

These writers report in favour of the employment of orthoform for cracked nipples. Orthoform is a powerful local anæsthetic, its action lasting about twelve hours. It must be kept continuously applied to the wounded surface. It causes a slight burning sensation when first applied. Orthoform has the advantage of being antiseptic and it produces a marked effect in hastening the cicatrization of the fissures. The authors tried it in forty cases and all experienced a marked relief. They recommend the application to the fissures of a saturated solution of orthoform in 80 per cent. alcohol, after nursing. A dry compress may then be placed over the nipples. They found that cicatrization was generally complete in four or five days without any interference with suckling.

Lactose as an Oxytocic.

KEIM. (*L'Obstetrique*, Jan. 15, 1899.) *B. M. J. Epitome*, Feb. 11, 1899.

The author has employed lactose in labours at or near term, and in one abortion at the second month with retained secundines. He found this compound always stimulated an inert uterus but was not efficacious until after complete dilatation of the cervix. The minimum dose is

from three-quarters of an ounce to an ounce. It is better to repeat small doses than to increase the dose when the effect is not rapid. It acted quicker the more advanced the labour. Ten minutes was the shortest interval but it may take two hours to act. Keim found it did not influence the expulsion of the after-birth, uterine retraction, or the secretion of milk. He extols lactose as free from any poisonous properties, guiltless of compromising the puerperium, and harmless to the fœtus.

Marriage and Heart Disease.

VINAY. *Lyon Medical*, Jan. 8, 1899.

TESS. *Munch. Med. Woch.*, October 4 and 11.

Jess bases his remarks on the observation of 29 cases. A diseased heart in which the compensating hypertrophy has been carried to the farthest point is not in a position to overcome the increased resistance to the circulation present in pregnancy and hence dilatation occurs. The dangers during parturition are due to (1) the pains, (2) mental excitement, (3) the emptying of the uterus with the consequent fall in blood pressure. This fall of blood pressure may lead to œdema of the lungs and death. Of the 29 cases 20 were examples of mitral disease (mostly stenosis), three of aortic disease, and three of combined aortic and mitral disease. There was only one fatal case in the 29 and the total number of births was 114. Jess concludes that in slight and well-compensated heart disease, child-birth is usually well borne. After repeated pregnancies symptoms may arise. In severe, uncompensated, valvular lesions, and especially mitral stenosis, child bearing is harmful. He does not agree that marriage must be unconditionally forbidden in heart disease.

Vinay agrees that marriage is not to be forbidden when the lesion is well compensated and no complication has arisen. On the other hand marriage must be forbidden if evident signs of insufficiency have been detected, such as pulmonary congestion, hæmoptysis, and irregular pulse. Most serious in this respect is persistent albuminuria with hypertrophied heart.

Should complications arise during pregnancy the physician should insist upon repose, milk diet, aperients, and free and frequent dry cupping of the thorax. The first evidences of failure of compensation in these cases are dyspnœa, palpitation, a tendency to bronchitis, and a pulse which, though it may be regular in rhythm and volume, is clearly too rapid. These Vinay terms gravidocardiac complications.

D. J. Evans.

Canadian Medical Literature.

UNDER THE CHARGE OF KENNETH CAMERON.

[The editors will be glad to receive any reprints, monographs, etc., by Canadian writers, on medical or allied subjects (including Canadian work published in other countries) for notice in this department of the JOURNAL. Such reprints should preferably be addressed to Dr. Kenneth Cameron 903 Dorchester street, Montreal.]

The Canadian Practitioner.

February, 1899.

1. The Modern Treatment of Tetanus, J. J. Cassidy.
2. Should the Deformity in Pott's Disease be Forcibly Corrected ?
H. P. H. Galloway.
3. Reflexes in Psychiatry, D. Clark.
4. Pulmonary Tuberculosis, John Hunter.
5. Does our Knowledge of the Pathological Changes in Operation in Spinal Curvature Illuminate the Path of its Rational Treatment ?
Thomas H. Manley.
6. A False Note from the Baltimore Oriole ! A. S. Ashmead.
7. The Radical Cure of Encephalocele, Fred. Winnett.
8. The Outbreak of Small-Pox in Kent County, Ont., W. F. Bryans.

1. **CASSIDY** points out that ever since the discovery of the microbe of tetanus by Nicholœir in 1884, experimental work has been done in the laboratories to ascertain the mode of attack which it pursues in the animal economy ; and it appears that this microbe does not spread in the body, but elaborates, in the injured parts, toxins, which it diffuses through the general circulation. This explanation being accepted, we see the necessity of the primary cleansing of the soiled wound, and the still greater necessity of keeping it dry, in order to prevent the decomposition of the wound secretions, which render possible the extensive formation and subsequent absorption of toxines. This may be the reason why amputation of the wounded part proves curative of tetanus by removing the seat of toxine formation ; and it may also account for the curative results obtained by hypodermic injections of phenol at the seat of the injury.

In reference to the treatment of this disease he quotes, Dr. Ascolj, who at a late meeting of the Royal Academy of Medicine at Rome, made the astonishing comparison between the relative values of the serum of Behring and Tizzoni, and the cure by phenic acid, as devised by Baccelli some years ago. The cases so far reported give the following results :

Treatment by Tizzoni's serum, died, 8 in 40.

Treatment by No. 1 Behring serum, died, 4 in 40.

Treatment by No. 2 Behring serum, died 2 in 9.

Treatment by phenic acid, died, 1 in 32 : leaving a considerable balance in favor of the Carbolic treatment.

There is a great tolerance for the drug in tetanus ; the use of large doses is indicated. For subcutaneous injection a 3 per cent. solution is used : the dose varies from one half to ten grains. The maximum dose for the twenty-four hours seems to be forty-five grains. Local baths may also be used with advantage.

2. GALLOWAY says that no subject in surgery has excited more widespread interest during the past two years than the forcible reduction of the deformity in Pott's Disease. There has been accumulated sufficient experience with the operation to enable each surgeon to decide whether the procedure is or is not at present justifiable. The theoretical dangers have not received much support in practice : but enough, however, to demand that they be taken into account. We would be justified in performing the operation if we could be sure of ultimate good recovery without deformity or with greatly diminished deformity, but satisfactory evidence that the result will be good is wanting, and the post-mortem findings quoted, are anything but reassuring. Our knowledge of the behavior of tuberculous bones does not make us hopeful regarding the filling in of the gap created by the operation, and the admitted tendency of the deformity to relapse after correction increases doubt on this point.

Surgeons should cease performing the operation, and wait patiently until the ultimate results, in a considerable number of the cases already treated, have been determined, not condemning the operation in the meantime, but simply holding it *sub judice*. As an exception to this conclusion, however, cases complicated with paralysis which cannot be cured by other means, should, in the absence of contra-indications, be submitted to forcible reduction, as there is abundant evidence to show that the operation usually cures or improves the paralysis promptly. Very early cases with slight deformity may, perhaps, also be attempted.

Calot reports better results, and appears to be more hopeful, than any one else, but the tendency to simplification of the original operation shows a distrust for Calot's method, or points to it being unnecessarily radical. The method described by Goldthwait is simpler and more reasonable.

3. D. CLARK protests against the statements that a large number of our insane women have become so afflicted because of ovarian or uterine disease. His experience shows that not more than 3 1-2 per cent. of female patients are afflicted in this way, in any serious form of derangement, yet, at least, 40 per cent. are certified as having become insane

through this cause. It need scarcely be said that this is a most extraordinary statement. Another fact is that when insanity sets in, many sub-acute diseases of the uterus disappear, such as dysmenorrhœa, the various forms of metritis, subacute ovaritis and catarrhal conditions. Insanity seems to be antagonistic to their active existence. These alternatives are also true in respect to other diseases, especially those of the lungs of the insane. He points out the inconsistency of removing ovaries which are only functionally affected. Extirpation means a premature menopause, yet the time of the natural menopause is always understood to be a critical period in a woman's life. To artificially produce a condition which is naturally said to be conducive to insanity is certainly a strange procedure to bring about relief, or to act as a prophylactic, if the usually accepted opinions are correct. The fact is, the change of life as well as puerperal crises have no special danger in the production of mental disorders unless there exists a predisposition thereto, either through hereditary tendency or because of general asthenia, and in which condition the uterus is only one factor, and consequently not the *cause* but an *occasion* of the outbreak. He therefore, objects strongly to the wholesale conclusion that at least 50 or 60 per cent. of the female insane need gynæcological treatment. Several eminent gynæcologists and alienists are quoted, as raising a warning voice against such extravagant statements and such wholesale manipulations.

1. WINNETT reports the following interesting case: The child, aged two months, was noticed at birth to have a tumour in the lower part of the occipital region. It had increased to twice its original size, but did not seem to affect the child injuriously. Circumference of the skull measures fifteen inches. The tumour is somewhat pedunculated, measuring at the base 6 1-2 inches, and at its largest part 8 1-2 inches. It is not tense, fluctuates, is slightly translucent, and can be partly emptied. When the child cries it becomes tense and darker in colour. In the centre can be felt a small hard body, leading to its base. The opening in the skull seems small and indistinct. Operation was performed by making two lateral flaps and the skin was found closely adherent to the membranes. The neck of the sac was cleared, and found to be about three quarters of an inch in diameter. It was ligated with a Staffordshire knot and removed. The flaps were sutured and the wound dressed in the usual way. The recovery was uneventful. Examination showed the tumour to contain, along with considerable fluid, the entire cerebellum, including the vermiform process. It is atrophied and weighs 26 grains. The successful issue of this operation is peculiarly interesting, in view of the hopelessness of palliative or radical treatment, as judged by many authorities.

The Canada Lancet.*February, '99.*

1. The Use of Hydraulic Pressure in Genito-Urinary Practice, with Special reference to Contracture of the Bladder. (Abstract of article, John Hopkins Hospital, Baltimore.) Hugh H. Young.

Dominion Medical Monthly.*January, '99.*

1. The Surgical Treatment of the Insane in Private Practice. Ernest Hall.
2. Two Month's Work in General Gynaecological and Abdominal Surgery. A. Laphorn Smith.

February, '99.

3. Report of Surgical Cases with Special Points of Interest. Dr. Wilkinson.

1. ERNEST HALL reports, in detail, twenty-three *cases of insane women whom he had examined, and twelve of whom he had operated upon. Of this number twenty-one, or 91 per cent. had lesions sufficient to call for treatment. He says that there has been sufficient evidence produced to show the frequency of the association of pelvic trouble and mental aberration; that in a certain proportion of the cases a return to mental health followed so directly (in two, so-called "hopeless cases", this change was complete within three weeks after the operation), that we are justified in concluding that the surgical measures were in some way responsible for the result. If the therapeutic value lay only in the surgical shock, it would be a prescription worthy of trial; that many cases are so improved that they can be managed at their homes and do not require to resume their asylum life.

3. WILKINSON relates the histories of eight very interesting surgical cases. (The paper would be much more comprehensible had it been revised by a proof-reader.)

Canada Medical Record.*February, '99.*

1. Tuberculosis in Animals. James H. Frink.
2. Progress of Gynaecology. A. Laphorn Smith.

1. J. H. FRINK, Dominion Veterinary Inspector, at St. John, N.B., contributed a most interesting paper on "Tuberculosis in Animals", before the St. John Medical Society. He pointed out that of all the domestic animals, cattle are the most susceptible, proving a most acceptable habitation to the bacillus, while the sheep, as far as our knowledge

goes may be considered the least susceptible. He related the history of the bacillus and the various lesions produced thereby, and discussed the value of the tuberculine reaction as a test for its presence in the tissues. Hereditary transmission is generally discredited; hereditary predisposition generally accepted; and infection positively accepted. Several instances of infection are cited and he made the statement that if a herd of animals have been continuously kept in one stable for two years, or even less, and on inspection for tubercle, one is found affected, it is not alone—there are more. And the ones in particular are those tied up on either side of the tubercle. Taking his own records and the official records of others, all are free, or the majority are affected. Congenital tubercle in animals is very rare.

That infection to the human family by the consumption of milk and flesh of tuberculous animals, be possible or impossible, has given rise to endless controversy. The belief that it is injurious only to drink the milk of an animal which has tubercle of the mammary gland did not appeal to him as being altogether rational. He cited an instance of a number of swine affected by being fed on the milk and offal from a tuberculous herd, of which only one animal had tubercle of the mammary gland, and that animal was not giving milk. It is generally accepted that there is little danger from eating tuberculous flesh, provided it is well cooked and the bacilli thus destroyed, but the fact that the toxic product generated by the bacillus in its work may be capable of exciting latent disease in the consumer, has not had, generally speaking, the attention which it deserves. The following means should be adopted to lessen the risk of infection to man from animals, and possibly, to avert infection of animals from man. (1) That all animals which contribute to the public milk supply shall be tested with tuberculine. (2) That milk from tuberculous animals shall not be used for human food. (3) That if milk from tuberculous animals is consumed, it shall be sterilized, and if exposed for sale it shall be so labelled. (4) That the milk and the flesh of animals suffering from general tuberculosis shall be destroyed absolutely. (5) That cattle which have reacted to the tuberculine test, and on second test have given no elevation of temperature, they and their products, shall for the purpose of sale be considered tuberculous. (6) That men and women suffering from pulmonary tuberculosis shall not be permitted to attend cattle which contribute to the public milk supply. (7) That the refuse, swill, and garbage, from hospitals, jails, and other public institutions which contain large numbers of people, be consumed by fire, and not be allowed as food for animals. (8) That on the determination of the existence of tuberculosis in a herd, no milk, shall be sold from it, until the herd is purged from the disease. (9) That as swine fed on the refuse of slaughter-houses are prone to tuberculosis, the public sale of their

carcases shall be prohibited. (10) That every carcase of beef, together with the viscera, shall be inspected, and if free from disease, so labelled and marked. (11) Every municipality shall own and control its own abattoir, and all fresh meats sold in the city shall be slaughtered in it.

If these provisions were carried into effect, very little fear need be anticipated by the human family, of infection from animals. But the health of animals is being constantly menaced by tuberculous people. If consumptives are allowed to scatter *ad libitum* tuberculous discharges about public places, roads, stables, and markets, it will be a fruitless task to attempt eradication in the lower animals, however much progressive sanitary science, (as applied to animals) may confine it.

Canada Medical Record.

December, '98.

1. Two cases of Tubal Pregnancy.—Operation.—Recovery. A. Laphthorn Smith.
2. Clinical Lecture on Bell's Paralysis. F. W. Campbell.

L'Union Medicale du Canada.

Janvier, 1899.

1. Universités Allemandes. Eugène St. Jacques.

Février, 1899.

2. Grippe et Puerpéralité. Elphège A. René de Cotret.

La Revue Medicale.

Novembre 30, 1898.

La Santé Publique et l'Industrie Laitière. L. J. O. Sirois.

Décembre 7, 1898.

Un Cas d'Incontinence d'Urine Guéri par Colporaphie Antérieure et Postérieure. A. Laphthorn Smith.

Décembre 14, 1898.

De l'Emploi des Sels de l'Acide Sozoiodolic dans le Traitement des Affections Nazales. M. E. de Laval-Thyernay.

Décembre 21, 1898.

De l'Ophtalmie Purulente des Nouveaux Nés, Complications Provoquées par les Traitements Intempestif. L. Gauthier.

Décembre 28, 1898 ; Janvier 4, 11, 18, 25, 1899,

De l'Avortement incomplet, de la Conduite à Tenir. Traitement. (Rapport des trois dernières séances de la Société Médicale de Québec.)

Février 8, 1899.

De l'Hystérie et sa Traitement, par M. le Dr. Gilles de la Tourett Leçon
inédites recueillies par M. le Dr. Chas. DeBlois.

Février 15, 1899.

Etudes sur la Cause ou Condition Première de Toute Maladi. C. P. Paquin.

Février 22, 1899.

Progrès de la Gynécologie. A. Laphorn Smith.

Reviews and Notices of Books.

TWENTIETH CENTURY PRACTICE :—An International Encyclopedia of Modern Medical Science by Leading Authorities of Europe and America. Edited by Thomas L. Stedman, M. D., of New York, Volumes XIII, XIV, XV, XVII, Infectious Diseases. New York, William Wood & Company.

These volumes contain matter dealing with the subject of infectious disease only, while volume XVII concludes this group of diseases and includes malignant neoplasms. Volume XVI is not yet issued. That so much as one-fourth of this very complete work should be taken up in dealing with these diseases shows how much advancement has been made recently in the study of bacteriology, infection and immunity, and the application of serum treatment in diseased conditions.

Volume thirteen contains from P. Brouardel, M. D., of Paris, an article on Vaccinia. Jules Comby, M. D., of Paris, writes on Mumps. In addition to the classic text-book symptoms and signs of the disease, Dr. Comby gives interesting historic facts concerning mumps. He regards the demonstration of the bacteriology "incomplete as experimental proof is wanting". That portion of his article dealing with extrasalivary localizations and complications of mumps is divided into genital and non-genital localization. He points out that relapses may occur and in a case marked by recurrent relapses the spleen is described as involved.

Harold C. Ernst, M. D., of Harvard Medical School, writes to considerable length a most instructive article on Infection and Immunity. He sets out to make "a statement of the series of experiments leading to the present position on these points," and deals with his matter under two headings:—"first, the experiments leading to our present ideas upon infection, and the methods by which it may occur; second, the consideration of immunity, (a) natural, and (b) acquired". The results of the extensive experimental work done by an army of workers in this field are presented in such a way as to shed a clear light upon this subject of immunity, while they make "the therapeutic prospects for the future very bright." It is to be regretted that no bibliography is to be found at the end of this article.

The late Ernest Hart wrote in conjunction with Solomon C. Smith

on Water-borne Diseases. In the introduction to this subject, it is divided into two main groups, according as to whether the contaminating substance is living or non-living. Under the last named group, which is treated first, are, lead, zinc, arsenic, copper, and iron; clay and marl; excessive amounts of lime and magnesium salts; and various organic products arising from the decomposition of animal and vegetable substances. This group occupies but a few pages, while the second group comprises the bulk of the article and includes a consideration of the entozoa and bacteria which may be water-borne and thus favour the production and extension of diseases. Typhoid fever, cholera, dysentery, diarrhœa, and yellow fever are included and the preventive measures are discussed. John William Moore, of Dublin, treats of the subject of Smallpox in an article covering upwards of one hundred pages, including an extensive list of references.

Victor C. Vaughan's article is upon Ptomaines, Toxins and Leucomains. Mussel, meat, milk, fish, and cheese poisoning, and vegetable food poisoning, require for their scientific discussion an array of new terms quite puzzling to the ordinary reader. With the poisons of the specific infectious diseases most readers are familiar. With the discussion of leucomains their sources and relation to diseases, Dr. Vaughan concludes his writing stating therein, that the scientific study of the relationship of leucomains to disease is yet to be carried out, and expresses the belief that they may yet be as fully established in the causal relationship to disease as bacteria are to the infectious diseases.

The very practical contribution of J. Dawson Williams, on the Duration of the Periods of Incubation and Infectiousness in Acute Specific Diseases, is an important feature of this volume.

Volume fourteen deals with scarlet fever, measles, German measles, chicken pox, glandular fever, whooping cough, cholera infantum, cholera nostras, Asiatic cholera, dengue, beriberi miliary fever, and Malta fever. The contributors are Dillon Brown, of New York; David Bruce, of South Africa; Sir Joseph Fayrer, Bart., of London; Frederick Forchheimer, of Cincinnati; A. Jacobi, of New York; A. Netter, of Paris; Nathaniel Read Norton and Joseph O'Dwyer, of New York; Theodor Rumpf, of Hamburg; A. A. de Azevedo Sodré, of Rio de Janeiro; and Dawson Williams, of London. O'Dwyer and Norton, in their article on Whooping Cough, state that the weight of evidence is in favour of the specific character of Koplik's bacillus. Of two contributions by Dawson Williams, one describes the characteristic features of Glandular Fever, which has been recognised and described by but one American writer, J. Park West. The first detailed description was given by E. Pfeiffer in 1889. Jacobi's article dealing with Cholera Infantum is a valuable contribution. Theodor Rumpf, writing upon Cholera Nos-

tras and Asiatic Cholera, covers upwards of 170 pages in this volume, dealing exhaustively with the latter subject from the historical, etiological, pathological, and anatomical points of view. These two volumes are most valuable as books of reference on the subjects discussed.

W. F. H.

TWENTIETH CENTURY PRACTICE OF MEDICINE. VOL. VII.

This volume opens with an excellent account of the diseases of the pleura by Dr. Herbert B. Whitney. The subject of Pleurisy is very fully discussed, and the debatable points, particularly in the treatment of purulent effusion, are clearly and ably dealt with.

Riegel contributes an interesting article on Asthma, embodying the old and well-worn facts with the more recent work on the subject. Several figures of Churchmann's spirals are given and their significance fully dealt with. In the treatment, chloral and morphia are highly spoken of for the severer paroxysms, a preference being indicated for the latter drug.

E. Fletcher Ingals devotes the greater part of his article on Hay-Fever to treatment. The local measures adopted are fully considered, much importance being attributed to cauterization of sensitive areas in the nasal membrane and to local application.

A concise but suggestive chapter by Main, of Paris, is devoted to Diseases of the Mediastinum, and of the Diaphragm.

The section on Blood Diseases has been intrusted to Dr. Stengei, of Philadelphia, and deals exhaustively with the anemias, scurvy, hæmophilia, and purpura. These subjects are all treated in a judicious and interesting manner, and will well repay careful perusal.

Diseases of Menstruation are described by Cushing and Cumston. The general as well as local forces are fully discussed and much information is conveyed in a comparatively short space.

An interesting chapter on Sexual Disorders in the Male is contributed by Charles W. Allen. The onus of sterility is thrown chiefly on the male, the author attributing seventy per cent. of cases to this cause. The volume concludes with a full account of Clinical and Microscopical characters of Urine by James M. French, which will be found of much value for reference.

We can confidently recommend this volume as an authoritative and complete treatise on the subjects referred to. The printer's work is excellent and the clear type greatly facilitates the perusal of the book.

F. G. F.

INTERNATIONAL CLINICS.—A Quarterly of Clinical Lectures on Medicine, Neurology, Surgery, Gynæcology, Obstetrics, Ophthalmology, Laryngology, Pharyngology, Rhinology, Otology, and Dermatology, and Specially Prepared Articles on Treatment and Drugs. By Professors and Lecturers in the leading Medical Colleges of the United States, Germany, Austria, France, Great Britain and Canada. Edited by Judson Daland, M. D., Philadelphia; J. Mitchell Bruce, M. D., London; and David Finlay, M. D., Aberdeen, Scotland. Vol. IV., Eight Series, 1899. Philadelphia, J. B. Lippincott Company, Dominion Agent, Charles Roberts, Montreal.

In this fourth volume of the eighth series of *International Clinics* which is just to hand, among a large number of contributions many are found from Great Britain and the Continent. Sidney Martin, J. W. Ballantyne, James Finlayson, Alexis Thompson, W. Hale White, Thomas Pickering Pick, and others of the profession in Great Britain; Curschmann of Leipsic, Fournier, Grancher and Lop of Paris; Oppenheim and Rosenheim of Berlin; Urbantschitsch of Vienna; and Ziehen of Jena, contribute to make this issue of the *Clinics* one of the best of the series. Those also of the American Contributors are in the fore rank of the medical profession in their special departments.

An article of much interest entitled *Glonoinism* by George C. Laws is an important addition to the study of drug action.

The attractive features of the clinics hitherto apparent, are well borne out in this volume.

W. F. H.

ANNUAL AND ANALYTICAL CYCLOPÆDIA OF PRACTICAL MEDICINE.—By Charles E. de M. Sajous, M. D.; and One Hundred Associate Editors Assisted by Collaborators and Correspondents. Illustrated with Chromo-Lithographs and Maps. Volume II. Philadelphia, New York, Chicago. The F. A. Davis Company, 1899.

Volume II includes Bromide of Ethyl to Diphtheria. It seems to be the general consensus of opinion of those who have utilized the first volume of this work that the aim of the editors "not only to facilitate the labour of the practicing physician and to assist investigators and authors in their researches, but also to elucidate through contributions from men possessing special knowledge or unusual experience in a particular line, diseases which, owing to their complexity, are not generally understood", has been achieved to a remarkable degree.

The second volume is fully up to the high standard of the first. Among articles specially attractive may be mentioned :—Cerebral Hæm-

orrhage, by Dr. William Browning of Brooklyn; Cirrhosis of the Liver, by Professor Adami of Montreal; Cholelithiasis, by Professor Graham of Toronto; Diabetes, by Professor Lepine of Lyons; Diphtheria, by Drs. Northrup and Bovaird, of New York, who contribute a masterly review of our present knowledge of this affection from every standpoint.

Among other notable articles may be mentioned one on Cocainomania by Dr. Kerr of London, one on Burns, by J. A. Cantrell of Philadelphia, and a most excellent article on Cholera Infantum, by Dr. Blackader of Montreal.

Sajous' Annual is well arranged and attractive. It is a great help to the busy practitioner who desires to keep abreast of the time.

G. E. A.

THE AMERICAN YEAR-BOOK OF MEDICINE AND SURGERY.

Being A Yearly Digest of Scientific Progress and Authoritative Opinion in all Branches of Medicine and Surgery, drawn from Journals, Monographs, and Text-Books, of the Leading American and Foreign Authors and Investigators. Under the general editorial charge of Geo. M. Gould, M. D. Illustrated. Philadelphia W. B. Saunders, 1899.

The year-book for the present year appears in the same form as before, the most important change being in the list of contributors. Dr. William Pepper's place has been taken by Dr. Stengel, who was associated with him last year, and Dr. Edsall, also of Philadelphia. A large part of the portion devoted to General Medicine is taken up with the infectious diseases, in which the main advances made during the year have taken place. Evidence continues to accumulate regarding the value of Widal's serum reaction in typhoid fever. Those cases where the reaction is present without the symptoms of fever are held to be likely due to typhoid 'infection' without the actual development of the fever. Under General Surgery, Keen and DaCosta note as the most striking advance in the year, the performance of total gastrectomy for malignant disease without necessarily interfering with the function of the digestive system in the support of life. The stomach is seen to be of far less importance than was expected. Considerable space is taken up by the various methods proposed for uniting the ends of divided intestine, and instructive cuts of the many modifications of the Murphy button, rubber bags, forceps, etc. are of great aid in understanding the technique of the operations described. Appendicitis is still the subject of considerable discussion, the indications for operation and its technique forming, as they did last year, the principal points upon which a difference of opinion exists. In Obstetrics, the pathology of the fetus and fetal ap-

pendages has been advanced considerably by work done on both sides of the Atlantic. The trend of Gynæcology can be summed up in one sentence. "The aim to-day is to see, not how much can be safely removed, but how many of the pelvic organs can be saved". This is a radical but much needed change.

All departments are thoroughly and exhaustively reviewed, and the book represents an immense amount of labour on the part of the compilers to present a fair unprejudiced synopsis of the year's work with an occasional explanatory, commendatory, or critical note. It is well indexed and will be found of the same value as heretofore as a book of reference for recent advances in medical science.

G. G. C.

MEDICAL DISEASES OF INFANCY AND CHILDHOOD.—By Dawson Williams, M. D., London. Fellow of the Royal College of Physicians of London, and of University College, London: Physician to the East London Hospital for Children, Shadwell. Lea Brothers and Company, Philadelphia and New-York.

Dr. William's object in writing this book is stated to be, "to give to young practitioners of medicine and to those who have not previously paid much attention to the subject, a guide to the clinical study of disease as it occurs in infancy and childhood." The great fault with the recent additions to our text-books on children's diseases has been that they are too comprehensive for any but the specialist in Pediatrics. What the average young practitioner or the student wants, is to have the disease, concerning which he is seeking knowledge, presented to him as nearly as possible in its typical form and in such a way that he will recognise at once the symptoms on which a diagnosis is to be based, and the main indications for treatment. Such can be said of this work, which presents a short concise picture of the various diseases and thoroughly practical directions for treatment. There is an excellent introductory chapter on growth, sleep, clothing, baths, etc. and one on clinical examination which also contains what one may be pardoned for calling "tips" in the management of both mother and child during the examination and which the average man only learns after long and perhaps painful experience. As a thoroughly reliable and handy manual the book is to be recommended and will likely meet with a large circulation.

G. G. C.

TRANSACTIONS OF THE ASSOCIATION OF AMERICAN PHYSICIANS.—Thirteenth Session held at Washington, D. C., May 3, 4 and 5, 1898. Volume XIII. Philadelphia. Printed for the Association. 1898.

The transactions for the past year of the Association of American

Physicians are contained in a volume of 482 pages containing 32 articles and embracing a wide range of subjects. The President, Dr. Frederick C. Shattuck of Boston, takes for his opening address, "Some Remarks on Hospital Abuse." Flexner's paper on *Pseudo-Tuberculosis Hominis Streptotricha* is very suggestive and possibly some of the atypical cases of phthisis may be explained by the fact that there are other organisms than the tubercle bacillus which may give rise to a pathological condition closely resembling, if not indistinguishable from, tuberculosis in its clinical aspects. Dr. I. Adler, of New York contributes some interesting Observations on Cardiac Syphilis endeavouring to show that the lesions found in the heart as the result of syphilis are much more common than was thought. Drs. Trudeau and Baldwin of Saranac in a Resume of Experimental Studies on the Preparation and Effects of Antitoxic Serum in Tuberculosis, have only failures to record. Fussel, Jopson, and Taylor of Philadelphia contribute a review of Acute Leukæmia from a study of fifty-six collected cases. The fact that only the more recently reported cases had been examined for a differentiation of the various forms of leucocytes detracts somewhat from the value of their paper. Dr. Thayer of Baltimore contributes a very valuable paper on Nephritis of Malarial Origin, and Dr. Theobald, of Boston, one on the relation between Bovine Tubercle Bacilli and Human Bacilli from Sputum.

Altogether the book is a most valuable one and in the high character of the papers representative of the leading American association of physicians.

PRACTICAL URANALYSIS AND URINARY DIAGNOSIS.—A

Manual for the Use of Physicians, Surgeons, and Students. By Charles W. Purdy, M. D., L. L. D., Queens University, Fellow of the Royal College of Physicians and Surgeons, Kingston : Professor of Clinical Medicine at the Chicago Post-Graduate Medical School. Author of "Bright's Disease and Allied Affections of the Kidneys," etc. Fourth Revised Edition. Philadelphia, New York, Chicago. The F. A. Davis Company, 1898.

The necessity of issuing a fourth Edition of this work within four years of its appearance is sufficient evidence of its popularity which, indeed, is well merited. But little change has been found necessary in the present edition. A few of the tests which had become obsolete have been omitted, and several new illustrations have been added. We note that the author is still of the opinion that the most delicate test for minute quantities of albumin is the one devised by himself, namely, the addition of a given amount of saturated salt solution, acidulation with acetic acid, and boiling. In the quantitative estimation of albumin, too,

he claims that the commonly used albuminometer of Esbach is incorrect and that his own method of centrifugalization of measured quantities of urine, potassium ferrocyanide solution, and acetic acid, is absolutely reliable. While possessing great advantages theoretically and also in point of time, the writer has found it difficult, using Purdy's own electrical centrifuge, to get uniform results, the difficulty appearing to lie in the fact that the precipitated albumin does not always pack closely in the bottom of the percentage tube; two specimens of the same urine having under similar circumstances given different readings. It is stated in the edition under discussion that a speed of 1500 revolutions a minute for five minutes are necessary in order to get exact results. In the matter of quantitative estimation of sugar, too, Purdy's own method, which is certainly an excellent one and less liable to error than Fehling's, is rendered all the more simple by the insertion of a table which does away with the necessity of making calculations and enables one to read the percentage of sugar direct from the amount of urine used in the reduction of the copper solution.

Many parts of the book have been rewritten and all brought up to date so that the work will continue, as heretofore, to be an authority on the subjects of which it treats.

G. G. C.

GENERAL PHYSIOLOGY, AN OUTLINE OF THE SCIENCE OF LIFE. By MAX VERWORN, M.D., Ph.D., Professor of Physiology in the Medical Faculty of the University of Jena. Translated from the Second German Edition and edited by FRED. S. LEE, Ph.D., Adjunct Professor of Physiology in Columbia University. Svo., pp. 586, with 285 illustrations. London: Macmillan & Co., Ltd. New York: The Macmillan Co. 1899. Price, \$4.00.

This work is another illustration of the abiding and far reaching influence of great men. How wide that circle of waves, started in the scientific world of Germany by Johannes Müller, has extended. But for this great mind there would probably have been no Verworn.

The fact that physiology has been taught and has developed almost exclusively in connection with human medicine has been most unfortunate for that science, so far as breadth at all events is concerned. It is nevertheless noteworthy that Max Verworn is a Professor in the Medical Faculty of a European University. This book belongs to a class that should be especially welcomed at the present day, when specialism and, of necessity, narrowness are more and more a natural development, yet attended by undoubted disadvantages, if not positive evils.

The work under consideration is essentially a physiology of the cell. As the author states in his preface to the first edition: "The elementary

constituent of all living substance and the substratum of all elementary vital phenomena is the cell. Hence, if the task of physiology lies in the explanation of vital phenomena, it is evident that generally physiology can be only cell physiology."

This principle is consistently applied throughout, though at times, it must be regretted, and by no one more than by the broad-minded author himself, that the material for such a work is so scanty.

The reader may, perhaps, best learn the nature and scope of the book by the headings and subdivisions of the chapters :

I. The aims and Methods of Physiological Research. (1.) The problem of physiology. (2.) The history of physiological research. (3.) The method of physiological research.

II. Living Substance. (1.) The composition of living substance. (2.) Living and lifeless substance.

III. Elementary Vital Phenomena. (1.) The phenomena of metabolism. (2.) The phenomena of form changes. (3.) The phenomena of transformation of energy.

IV. The General Conditions of Life. (1.) The present conditions of life on the earth's surface. (2.) The origin of life upon the earth. (3.) The history of death.

V. Stimuli and their actions. (1.) The nature of stimulation. (2.) The phenomena of cell stimulation.

VI. The Mechanism of Life. (1.) The vital process. (2.) The mechanics of cell-life. (3.) The constitutional relations of the cell community.

Then follows a satisfactory bibliography and an index. Professor Verworn explains his purpose and method thus : " If a book is to reach a wide circle of readers its language must be neither too technical nor too prosaic. I have endeavoured to comply with this requirement. I wished to write something that would appeal first to my fellow physiologists, and offer them besides certain new facts and ideas, a summary of our scattered knowledge. But at the same time I wished the work to give to any interested scientific reader, whether a student of medicine, philosophy, botany, or zoology, an outlook over problems, facts, theories, and hypotheses of life ; in other words, I wished to give him an introduction to general physiology and thus afford him an idea of the important theoretical basis of his study."

Most readers of this book will thankfully acknowledge that the Jena professor has succeeded in the much needed work he has taken upon himself and which he tells us has been a labour of love.

The illustrations are numerous and good, the paper, printing, etc., all that one expects from the well-known publishers.

Prof. F. S. Lee, of Columbia University, New York, was well fitted,

for the work of translation. Naturally a painstaking, accurate, conscientious student and investigator, his contact in years past with such men as Martin, Brooks, and Ludwig, led to a broad and sound development, so that few could bring to the task he undertook so much sympathy and intelligence, and his work has been eminently well done.

All concerned are to be congratulated on the outcome of their joint labours, and the whole body of physiologists, biologists and physicians, on a new source of knowledge and inspiration.

W. M.

Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Stated Meeting, February 20th, 1898.

J. M. ELDER, M.D. SECOND VICE-PRESIDENT IN THE CHAIR.

Dr. Regina Landau, of Montreal, was elected an ordinary member.

Congenital Tumour from the Base of the Skull.



Dr. J. A. MACPHAIL shewed a fetus with a tumour protruding from the mouth and growing from the base of the skull. The foetus was deliv-

ered at the seventh month, by Dr Burnett, and was without other excess of defect of development. The pendant tumour was smooth, definitely encapsulated, globular in shape, very soft, and measured twelve inches in circumference, about the size of the head. Its attachments were upon the right of the middle line of the base of the skull, to the palatal process of the superior maxillary bone, to the pterygoid process and body of the sphenoid, to the vomer and the basilar surface of the occipital bone. The tumour was filled with blood and contained numerous small cysts. Photographs and slides were exhibited. Microscopically the following conditions were demonstrated:—1. Large round sarcoma cells. 2. Large blood spaces. 3. Large lymph spaces. 4. Myomatous degeneration. 5. Other degenerations of fibrous tissue.

Dr. NICHOLLS asked if the tumour presented any of the characteristics of a teratoma, as that was the commonest form of congenital tumour that springs from the soft palate.

Dr. MACPHAIL replied in the negative.

Concretion of Submaxillary Gland with Induration Simulating Carcinoma.

Subcoccygeal Teratoma.

Hydrocephalus.

Dr. ARCHIBALD read for Dr. BELL the histories of these cases and exhibited the specimens. (To be published later.)

Appendicitis, with Unusual Conditions.

Dr. J. ALEX. HUTCHISON read the report of the case. (See page 205 of the March number.)

Dr. GARROW asked if the separation had taken place close to the cæcum, and if there was any evidence in the omental mass that adhesions had formed near the site of separation.

Dr. ARCHIBALD questioned the advisability of drainage in the case. Formerly it was the custom when in doubt, to drain, but now he thought that the rule was not to drain.

Dr. HUTCHISON, in reply, said that the cæcum was quite free, and the separation had been quite close so that only a small puckered scar remained. He had discovered no bands of adhesion. In regard to drainage, as he had never met with a similar condition he thought, at the time, that it was well to drain, but if he had to repeat the operation he would not do so.

The Discretionary Powers of a Surgeon.

Mr. A. G. BROOKE CLAXTON, B.C.L., of the Montreal Bar, read a paper on this subject. (See page 184 of the March number.)

Dr. T. G. RODDICK had listened to the paper with a very great deal

or pleasure. The innovation, introduced last year, of having a gentleman of the Legal Profession address the Society on questions of law affecting doctors, was to be highly commended, and he hoped that the plan would be encouraged. He congratulated Mr. Claxton on the able manner of conducting the case, and Dr Springle for having determined to fight it out rather than leave it unsettled. He felt that he had been often on the border-land of law suits, but only once had been actually threatened. The case, was that of a child who had had his arm mangled in a street accident. He, in consultation with Dr. Fenwick and others, had decided that immediate amputation was necessary to save the child's life. As the parents could not be found to give their consent, the operation was performed. Later on, the parents threatened an action, but when it was pointed out to them clearly that the delay endangered the child's life, the action was dropped. He had learned a great deal from Mr. Claxton's paper, he had not been aware that the surgeon was given so much latitude in law. Such latitude, he held, would not tend to make surgeons more loose, but very much more conservative, in the future. Though such was the case, it was necessary for the surgeon to take every precaution to protect himself, it might even be well to let the patient think the very worst of his condition. This was especially true of abdominal work, and permission should be obtained, and that in writing, to perform whatever operation the surgeon may find necessary.

Dr. F. A. L. LOCKHART thought that the whole profession should be very grateful to Dr. Springle. His was an experience that might happen to any one who is frequently operating. The operator cannot be perfectly certain what he will find before operating.

He had been struck by the Judge's action in bringing out very clearly the fact that the parts were so tender that a thorough examination could not be made. There was no comparison between this case and the Beattie-Cullingworth case: in the latter case the patient had simply cystic ovaries, an entirely different condition from pus-tubes, they might shorten life after a long process, but a condition like that in Dr. Springle's case would prove rapidly fatal. A very important question arises out of the case. Should the surgeon as a servant, though not a salaried one, of the Hospital be asked to pay all the expenses of the case, or should the Board of Management of the Hospital fight it out in their own name and bear the costs?

Dr. J. ALEX. HUTCHINSON had been always under the impression that a corporation is responsible for the actions of their servants. If a railway company is responsible in law for damages sustained through the errors or omissions of its employees, he thought that the Hospital should bear the responsibility of the suit. It should be the hospital against the individual, not the surgeon against the individual.

Dr. WYATT JOHNSTON said that he had made a thorough examination of the literature bearing upon the case, but had found nothing except the Beattie-Cullingworth case. Recently there had appeared a book by Prof. Brouardel treating of all medical and surgical responsibilities. He mentions the Cullingworth case and says that if a similar case came up in France, a similar judgment would be given. The point has been well brought out that the operation was one of emergency. Before a Medico-Legal Society of France, this question of emergency was discussed, as well as operations upon the insane. It was held that in cases of emergency in the insane, when the consent of friends cannot be obtained, the surgeon must use his own discretion.

Dr. J. M. ELDER stated that the best report of the Beattie-Collingworth case appeared in "The London Times." He thought that Mr. Justice Hawkins had taken very strong grounds when he held that any surgeon who did not remove what would involve a second operation, should be responsible for damages for such second operation. He thought that physicians should be very careful how they discussed their patient's ailments, and referred to the recent Playfair case.

Mr. CLAXTON, in reply, said it was questionable whether the hospital was responsible for its surgeon, some courts hold that it is, while some hold the reverse. If a hospital is sued it can turn round and say that it is not responsible, that it has been very careful in the selection of its men and will not have anything to do with the case, but if the surgeon is sued he believed that the hospital should step in and relieve the surgeon.

Stated Meeting, March 6th, 1899.

J. G. ADAMI, M. D., PRESIDENT IN THE CHAIR.

Dr. W. A. McArthur was elected an ordinary member.

Biological Test for Arsenic.

Dr. WYATT JOHNSTON described this test, which depends upon the production of an intense odour of garlic by *Penicillium brevicaulis* grown in presence of arsenic or its compounds.

THE PRESIDENT asked if the test was not too delicate for medico-legal work.

Dr. R. A. KERRY questioned whether arsenic in the glass would not lead to an error in the test.

Dr. JOHNSTON, in reply, said that the test should only be used as a preliminary one and if necessary a quantitative chemical analysis should be made.

An Unusual Form of Bromide Rash.

Dr. JAMES STEWART exhibited a man presenting an unusual form of bromide rash. He had been taking potassium bromide, 30 grains twice a day for six years, five years having elapsed since he had consulted a phy-

sician. During this time the face and shoulders had been covered with a severe acne but the unusual features of the rash had developed within the past year. It consisted of large pustules over an inch in diameter with an inflammatory indurated base which were very painful, appeared in successive crops and healed up without leaving any scars. Coincident with the outbreak of this severe rash the acne on the face became less severe. The lesions were numerous and all situated on the fore-arms. A somewhat similar case had been shown by Dr. Blackader in January 1897, except that the lower limbs had been the seat of the eruption.

Dr. A. D. BLACKADER said that these rashes were eliminative and only occurred when the elimination of the drug by the skin acted as an irritant on the glands. When the skin was in a healthy condition the eruption was not produced. In cases of this kind there was also streptococcus infection. The first and mildest form of the rash was the papular (acne) then pustular, and later a coalescence of these pustules. This latter condition was to be avoided as indicating a toxic action of the drug. In order to prevent these eruptions, care should be taken not to push the drug past a certain point. The full therapeutic effect could be obtained without producing these rashes. The administration of arsenic as a preventive was not effective. Its only action was to tone up the general health and so keep the skin in better condition and its glands more active. General cleanliness of the skin with regular bathing and laxatives was more to be depended upon.

THE PRESIDENT asked if these eruptions were not essentially microbic in origin, the drugs having lowered the skin vitality to a certain extent. This theory would explain individual idiosyncrasies.

Dr. LAPHORN SMITH asked if the combination of the three bromides was not less likely to produce the eruption than the exhibition of the potassium salt alone, and also if the man's memory had been affected.

Dr. A. BIRT, during four years experience in an asylum had found the potassium salt no more likely to produce the eruption than the other compounds of bromide all of which he had used.

Dr. STEWART in reply, said that he had seen the patient for the first time only two days before and was unable to say whether any loss of memory had occurred. He had seen eruptions after the administration of the sodium and ammonium salts. The view that the appearance of the eruption indicated a toxic action on the part of the drug and called for its discontinuance he did not consider correct, for the reason that one frequently meets with cases in which a comparatively small dose will produce an eruption which will disappear on increasing the amount. This is frequently seen in the exhibition of the iodides.

Pathological Specimens.

Dr. WYATT JOHNSTON exhibited a series of pathological specimens.

The Treatment of Diphtheria by the Use of Antidiphtheritic Serum.

Dr. J. E. LABERGE read a paper on this subject. (See page 261).

Dr. A. D. BLACKADER congratulated Dr. Laberge on the results obtained. All Montreal physicians would agree that the objections to this method of treatment were trifling, although the few cases of sudden death which were startling and unaccountable were apt to cause distrust.

Dr. A. T. BAZIN asked if Dr. Laberge had used the concentrated serums which were now available and if so if his results had been as good as those obtained from Roux's serum. During his own period of administration of part of the Civic Hospital in 1895—96, Roux's serum was the only one on the market. Samples of other makers which had been sent to him had not produced as good effects, but since then he had used the improved more highly concentrated serums of these same makers with equally good results and much less discomfort to the patient.

Dr. H. A. LAFLEUR used the concentrated serums altogether and found them more easily administered especially to children. The rare cases of sudden death had been explained by the introduction of air into a vein but this could hardly be the case because even with the vein exposed it was difficult to puncture it, and it was much less likely to happen during an injection into the subcutaneous tissues.

Dr. H. S. BIRKETT asked what results Dr. Laberge had obtained in the laryngeal form of diphtheria. In his experience, since the introduction of antitoxic treatment intubation was much less frequently called for.

Dr. WYATT JOHNSTON asked if vomiting had been noticed to follow the administration of antitoxin. In the case recently reported, the autopsy had shown œdema of the glottis caused by fluid inspired during vomiting. It was not necessary for the food actually to obstruct the larynx, the mere presence of food particles in the larynx would cause spasmodic obstruction and death from shock.

Dr. A. BIRT thought the skin eruptions were much rarer with the concentrated serum.

Dr. A. J. RICHER stated that Roux's serum as at present supplied contained 250 units to the cubic centimetre. Royer and Rougier, the Canadian agents, were prepared to supply a limited amount of antitoxin free to pauper patients on the presentation of a physician's certificate.

THE PRESIDENT said that it was very gratifying to find that the results obtained by Dr. Laberge were so good. Dr. Bazin in 1895 had reported a mortality of 10.3 per cent. in all cases, and as a result of the work done by these two physicians, the antitoxic treatment had been generally accepted by the profession in Montreal. Medical men through-

out the Province were not so familiar with the use of the serum and he trusted that this paper would be published in both the French and English medical journals.

Dr. LABERGE, in reply, stated that he had used other serums but had not found them so effective and thought that they produced eruptions more frequently. He had seen no vomiting follow the administration of the antitoxin.

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GLYCERINATED VACCINE.

The recent small-pox scare is not so much a thing of the past as to make a few remarks on vaccination seem belated. Once more, though on a very small scale, the protective value of efficient vaccination has been demonstrated in the case of those exposed to variolous infection ; and the willingness and even eagerness of this city's population to be vaccinated is a pleasing contrast to the opposition shown in too many instances at the time of the epidemic in 1885. Indeed, the medical profession is more concerned at the present moment with the methods of vaccination than with academic discussions designed to convince the professional anti-vaccinator and his adherents.

Human vaccine and arm to arm vaccination were superseded many years ago by animal vaccine preserved on 'points' or stored in 'tubes', with obvious advantage to the vaccinator, who was hence forward always sure of a supply, and to the vaccinated, who no longer had reason to fear that with protection from small-pox he might (though the chances were remote) at the same time acquire syphilis or even, possibly, local tuberculous infection. Now, vaccine points and dry vaccine in tubes are giving place to aseptic glycerinated vaccine, which seems to be, if one may judge from reports in current medical literature, a great advance on the methods of preparation hitherto used.

The credit of popularizing the use of Glycerinated Lymph is due to Dr. S. Monckton Copeman, of London, whose Milroy Lectures on Vaccination have just been issued in book form. In a paper presented to the International Congress of Hygiene held in London in 1891 Dr. Copeman called attention to a special method for the bacteriological purification and preservation of vaccine lymph, consisting, "in the intimate admixture of a given amount of lymph, or rather vesicle pulp, with a

sterilized 50 per cent. solution of chemically pure glycerine in distilled water, and in subsequent storage of the resultant emulsion, in sealed scribe glasses. The oculist occupies the same position in relation to the optician as he does towards the druggist and has a right to exact the same care in filling his prescriptions from the one as he does from the other. Moreover he is likely to object to the prescribing optician just as much as he or any other physician does to the prescribing druggist.

There is no reason why the public should not confide the care of their health or their eyesight to unqualified practitioners, druggists or opticians, instead of first seeking medical advice, if they choose to take their chances in this way. The evil in either case tends to correct itself, more often perhaps in the case of the prescribing optician than in that of the druggist; for, as a matter of fact, a very large proportion of persons requiring to use glasses on account of errors of refraction cannot by any possibility obtain relief except at the hands of an oculist,—of one who has the advantage of a thorough medical training and the right to use drugs the action of which is absolutely essential to a complete investigation of the case and of the many complications so often associated with errors of refraction. Moreover, the optician has no knowledge of the morbid conditions which are often the real cause for seeking relief by the use of glasses. Sooner or later, the failure of the glasses to afford relief compels the sufferer to look for other advice, and herein lies the chief danger as it sometimes happens that the delay is disastrous. Such a case is reported in the *Philadelphia Medical Journal* for March 18th, 1899, and many similar ones are to be found in every ophthalmic surgeon's records.

The itinerant optician, however, is the most reprehensible creature of all his tribe. For pure effrontery, impudence, and downright knavery he has no parallel. As witness the poor farmers and farmer's wives throughout the length and breadth of the land who have paid their five and ten dollars for gold mounted pebbles of wondrous virtue, and found themselves in possession of brass fittings to a bad piece of window glass. The number of these dupes is legion. The travelling spectacle vendor commonly assumes some high-sounding title, or, worse than this, pretends to be the agent of some oculist of repute whenever he reaches a locality where that oculist happens to be well known, and the ignorant never fail to swallow the bait. It seems impossible to invoke the law against these specious swindlers, but if every medical practitioner throughout the country would inform his clients that no reputable oculist ever did or ever will employ an agent, to examine eyes and sell glasses, something would be accomplished in the way of preventing this disgraceful method of swindling the ignorant and unwary.

capillary tubes, for several weeks". The advantages of this method of preserving and storing vaccine lymph are many. It has been shown that vaccine so prepared becomes in time strictly aseptic, *i. e.*, that the glycerine tends to destroy the bacteria that were originally present in the vesicle pulp, so that in six weeks from the time of its preparation and storage in sealed tubes it is a sterile medium. This was shown by inoculating a series of agar plates with the glycerinated product immediately after its preparation, and at intervals of one, two, three and four weeks, respectively. These plates showed an abundant growth of bacteria in the first series, which diminished progressively in the subsequent series, until, with material that had been kept four weeks, no growth of bacteria was observed.

With such vaccine and asepsis in performing vaccinations, we shall hear less of suppurating vaccination wounds. It is, moreover, claimed that glycerine will kill out the streptococcus of erysipelas and the bacillus of tubercle, should either of these organisms be accidentally present in the vesicle pulp. In addition, it has been found that glycerination of lymph-pulp greatly increases the available quantity of the lymph without deteriorating its quality, and this is obviously a great advantage when large supplies of vaccine are required in epidemics of small-pox. Still further advantages are the non-coagulability, the permanent fluidity of this preparation and the maximum number of successful vaccinations.

Lastly, "the expense of producing glycerinated lymph is proportionately small, since the amount obtainable from each calf is enormously increased." With so much in its favour and nothing against it, it is to be hoped, and it is safe to say, that glycerinated vaccine will surely supersede other less cleanly and less efficient forms of this indispensable product.

PRESCRIBING OPTICIANS.

There is an unfortunate confusion in the minds of the people, *i. e.* the heterogeneous mass of humanity commonly designated 'the public' as to the meaning of the words 'oculist' and 'optician'. He will be a public benefactor who succeeds in making every one understand that the oculist is a surgeon, a qualified practitioner of medicine and surgery, who has, or should have, spent years in acquiring a special knowledge of his work after having obtained his medical degree; that he is neither a shop-keeper nor a mechanic; but that, on the other hand, an optician is a mechanic neither more nor less, who may have some knowledge of the anatomy and physiology of watches and clocks, but knows nothing of the anatomy and physiology of the human frame, or of the optical problems he undertakes to solve when he proceeds to examine eyes and pre-

It is a sad fact that physicians themselves—sometimes through carelessness or ignorance promote the evil by recommending their patients to any one and everyone who sells glasses or calls himself an optician.

The intelligent portion of the public are always willing to be guided by the advice of their family physician, but if he be negligent his influence is more than likely to prove positively harmful. No physician in his right mind would make a practice of sending his patients to a prescribing druggist for advice and treatment. With equal reason he should abstain from sending them to the 'Examination Free,' optician. That which is offered to the public free, as a rule, is worth nothing.

McGILL MEDICAL LIBRARY.

Donations to the Medical Library for the quarter ending February 15th, 1899.

Presented by the authors :

- Lauder Brunton, M. D., D. Sc.—*Lectures on the Action of Medicines*. 1 98.
 Brockbank, M. D.—*On Gall-Stones*. 1896.
 Albert H. Buck, M. D.—*Diseases of the Ear*. 1898.
 T. S. Clouston, M. D. Edin., F. R. C. P. E.—*Clinical Lectures on Mental Diseases*. Ed. V. 1898.
 John Chalmers DaCosta, M. D.—*Manual of Modern Surgery*. 1898.
 Hobart Amory Hare, M. D., B. Sc.—*A Text-Book of Practical Therapeutics*. Ed. VII. 1898.
 Howard A. Kelly, A. B., M. D.—*Operative Gynæcology*, 2 volumes. 1898.
 Landouzy, M. D.—*Sérothérapie*. 1898.
 Nathan Oppenheim, M. D.—*The Development of the Child*. 1898.
 Roberts, M. D.—*Contributions to Orthopædic Surgery*. 1898.
 Thomas F. Rumbold, M. D.—*The Hygiene of the Voice*. 1898.
 Henry R. Swanzy, A. M., M. B.—*Diseases of the Eye*. 1898.
 James Tyson, M. D.—*Physical Diagnosis*. 1898.
 J. Francis Walsh, M. D.—*The Anatomy and Functions of the Muscles of the Hand and of the Extensor Tendons of the Thumb*. 1897.

The Library is also indebted to the following contributors :

- Buffalo Medical Journal, 1897-98.
 Professor J. C. Cameron.—*British Gynæcological Journal*, 1897.
 Professor F. G. Finley.—*Physical Diagnosis*, by G. A. Gibson and W. Russell, 1891.
Dissections of the Human Body, by R. E. Carrington, 1881.
Guy's Hospital Reports, Vol. 68, 1898.
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 Messrs A. T. Mussen, D. M. Lineham, and G. Wilkins.—*Pathology Notes*, by J. G. Adami, M. D., and *Surgery Notes*, By T. G. Roddick, M. D.
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- Saint Thomas's Hospital Reports, Vol. 26, 1898.
 State Hospitals, New York, Vol. 2, 1897.
 Scientific Memoirs by Medical Officers of the Army of India, Part X, 1897.
 Professor Shepherd, — University Medical Magazine, 1898 : Archives of Pediatrics, 1892 : Canadian Practitioner, Vol. 23, 1898 : Journal of Cutaneous and Genito-Urinary Diseases : Vol. 16, 1898 : Medical Record, 1898.
 Transactions of the American Laryngological Association, 13 volumes
 Transactions of the American Ophthalmological Society, 1898.
 Transactions of the Academy of Medicine, Cincinnati, 1897-98.
 Transactions of the American Orthopedic Association, Vol. XI, 1898.
 Transactions of the Canadian Institute, 9 volumes.
 Transactions of the Clinical Society, London, 1898.
 Transactions of the College of Physicians, Vol. XX, 1898.
 Transactions of the Medical Society of London, 1898.
 Transactions of the Michigan State Medical Society, 1898.
 Transactions of the Pathological Society of London, 1898.
 Transactions of the Society of Alumni of Bellevue Hospital, 1897-98.
 Universal Medical Annual, 1896.
 Union (La) Médicale du Canada, 1896.
 Dr. Van Gieson, — Archives of Neurology and Psychopathology, Vol. 1, 1893.

Text-books and other new works :

- Outlines of Zoology, by J. A. Thompson, M. A., F. R. S. E., 1895.
 Ligaments, Their Nature and Morphology, by Bland Sutton, 1897.
 Medical Jurisprudence, by I. J. Reese, M. D., 1898.
 Practice of Obstetrics, Edited by Invelt, 1899.
 Quain's Appendix, 1896.
 Revue des Sciences Médicales, 18 volumes..
 Archives de Médecine Expérimentale, 1898.
 Arch. für Physiologie, 1898.
 Deutsches Arch. für Klinische Medicine, Vol. 61, 1898.
 Dublin Journal of Medical Science, Vol. 106, 1898.
 Schmidt's Jahrbucher, 4 volumes, 1898.
 Charité Annales, 1898.
 Transactions of the Ophthalmological Society of the United Kingdom, Vol. 18, 1898.
 Sajous' Annual, Vol. 2, 1898.
 Practitioner, London 1898.
 Jahresherecht des Ges. Medicine, 1898.

GESTA MEDICORUM.

"QUICQUID AGUNT MEDICI NOSTRI FARRAGO LIBELLI."

The International Association of Railway Surgeons will hold their Annual Meeting on May 31, June 1 and 2, at Richmond, Virginia.

The President-Elect of the British Medical Association is to be Sir William Turner, M.D., F.R.S., Professor of Anatomy at Edinburgh.

Dr. C. F. Martin, Lecturer in Medicine in McGill University, has returned to the city after a winter's study in Berlin, Graz and Vienna.

William Mitchell Banks, M.D., F.R.C.S., who delivered the Address in Surgery at the Montreal meeting of the British Medical Association, received recently the degree of LL.D. from Edinburgh University.

Dr. Simon Flexner, Professor of Pathological Anatomy in the Johns Hopkins University, has accepted the chair of General Pathology, in the University of Pennsylvania in succession to Dr. John Guit  ras, who goes to Havana.

Dr. Campbell Davidson, who graduated at McGill last year and has since been Externe Pathologist at the Montreal General Hospital, has given up the latter appointment and has left for Vancouver to join the S.S. Tartar as Surgeon.

The sixth International Otological Congress will take place in London, beginning August 8th. The President is Dr. Urban Pritchard. The subject for special discussion will be "Indications for opening the mastoid in chronic suppurative otitis media," which will be introduced by Professor Macewen of Glasgow, Dr. H. Knapp of New York, Dr. Luc of Paris, and Professor Pollitzer, of Vienna.

At the convocation of the Medical Faculty of Bishop's College, held on April 11th, the following received the degree of M.D., C.M.: E. L. Sutherland, B. J. A. Robinson, J. C. Tanguay, T. H. Jackson, T. Laurin and C. A. MacDougall. The Wood gold medal and Nelson gold medal were taken by E. L. Sutherland, the David silver medal by J. A. Gillespie.

Some further improvements in the Medical Faculty buildings of McGill University are to be looked for in the near future. Although the existing buildings were doubled in extent only about four years ago, they are again too small. The Library, Museum, and the Histological and Pathological Laboratories especially must be enlarged to meet existing demands.

The following have graduated in medicine at Queen's University, Kingston, at the last convocation: C. H. Amys, Lakefield, Ont.; J. Y. Baker, B.A., Summerstown, P.E.I.; A. B. Chapman, Kingston; E. G. Cooper, Lanark; J. L. Devlin, Montreal; J. F. Goodchild, Craigleigh; V. L. Goodwill, Charlottetown, P.E.I.; A. F. Grant, Peterboro; E. A. Harris, Montreal; R. W. Huffman, Bath; H. A. Hunter, B.A., Smith's Falls; R. D. Menzies, M.A., Glen Tay; J. Mitchell, Beechburg; H. H. McCrea, Easton's Corners; A. Nugent, B.A., Lindsay; A. W. Richardson, B.A., Kingston; G. S. Sadler, Pakenham; A. Shaw, Kingston; W. J. Simpson, Kingston; T. Snyder, M.A., E. C. Watson, M.A., Kingston; A. R. B. Williamson, M.A., Kingston.

The prize men are as follows: J. G. Bogart, Morrisburg, prize in anatomy, physiology and materia medica. Medal in medicine, A. R. B. Williamson, Kingston. Medal in surgery, E. C. Watson, Kingston, Chancellor's scholarship, E. G. Cooper, Lanark.

NEW BOOKS, ETC., RECEIVED AND NOTED.

The American Year-Book of Medicine and Surgery. Edited by George M. Gould, M.D., Philadelphia, W. B. Saunders, 1899.

Nursing, Its Principles and Practice, For Hospital and Private Use. By Isabel Adams Hampton. Toronto, J. A. Carveth & Co., 1899.

Transactions of the American Climatological Association. Volume XIV., 1898. (

Christian Science, A Sociological Study. By Charles A. L. Reed, A.M., M.D., McClelland & Co., Cincinnati, 1898.

Primary Carcinoma of the Gall Bladder. By Gustav Futterer, M.D. Reprinted from Medicine, 1898.

Cocaine Addiction and Its Diagnosis. By Stephen Lett, M.D. Reprinted from The Canada Lancet, December, 1898.

How Soon do Bacteria, which Enter the Portal Vein Become Disseminated Throughout the System, and when does their Elimination Commence? By Gustav Futterer, M.D. Reprinted from Medicine, July, 1898.

The Milk Supply of Cities: Can it be Improved? By Henry O. Marcy, A.M., M.D., LL.D. Reprinted from the Journal of the American Medical Association, December 10, 1898.

The Advantage of Physical Education as a Prevention of Disease. By Charles Denison, A.M., M.D. Reprinted from the Bulletin of the American Academy of Medicine. Vol. III., No. 9.

State and Municipal Care of Consumptives. By S. A. Knopf, M.D. Reprinted from the New York Medical Record, September 24, 1898.

The Radical Cure of Inguinal Hernia, by Fowler's Method. By H. C. Walker, M.D. Reprinted from The Leucocyte. Vol. VI., Nos. 1 and 2.

Hereditary Syphilis. By L. Duncan Bulkley, A.M., M.D. Reprinted from the Journal of the American Medical Association, November 5, 1898.

Organotherapie ou Opootherapie. Par Le Dr. C. Hillemand. Paris, 1899.

The Treatment of Deficient Excretion from Kidneys not Organically Diseased, and some of the Diseases peculiar to Women, and Diseases of the Skin. By L. Duncan Bulkley, A.M., M.D. Reprinted from the New York Medical Journal, Nov. 5th, 1898.

Mechanical and Surgical Treatment of Fractures of the Surgical Neck of the Femur. By Arthur J. Gillette, M.D. Reprinted from the Northwestern Lancet, August 15th, 1898.

Some Sources of Failure in Treating Lachrymal Obstructions. By Leartus Connor, A.M., M.D. Reprinted from the Journal of the American Medical Association, October, 8th, 1898.

The Early Diagnosis of Cancer of the Stomach. By Chas. D. Aaron, A.M., M.D. Reprinted from the Journal of the American Medical Association, March 20th, 1897.

Caries of the Teeth and Diseases of the Stomach. By Chas. D. Aaron, M.D., Reprinted from the Charlotte Medical Journal, October, 1898.

Diarrhoea and Bacteria. By Chas. D. Aaron, M.D. Reprinted from the New York Medical Journal, May, 8th, 1897.

Practical Points in the Administration of Chloroform and Ether. By J.

Bennet Morrison, M.D. Reprinted from the New York Medical Journal, Nov. 9, 1898.

The Elimination of Bacteria from the General Circulation by the Liver and through the Bile Passages. A Claim for Priority in Stating the Presence of the Bacillus Typhi Abdominalis in the Gall Bladder. By Gustav Futterer, M.D. Reprinted from Medicine, November, 1898.

A Text-Book of Obstetrics. By Barton Cook, Hirst, M.D. Philadelphia, W. B. Saunders, 1898.

The Practice of Obstetrics by American Authors. Edited by Charles Jewett, M.D. Lea Brothers & Co., Philadelphia and New York, 1899.

A Treatise on Unripe Cataract. By William A. McKeown, M.D., M.Ch. London, H. K. Lewis, 1898.

The Phonendoscope and its Practical Application. By Aurelio Bianchi, M.D. Translated by A. George Baker, A.M., M.D. Philadelphia, George P. Pilling & Son, 1898.

Acromegaly, An Essay to which was awarded the Boylston Prize of Harvard University, for the year 1898. By Guy Hinsdale, A.M., M.D. Reprinted from Medicine, 1898. William M. Warren, Detroit.

The Medical News Pocket Formulæ for 1899. By E. Q. Thornton, M.D. Lea Brothers & Co., Philadelphia and New York, 1899.

The Sexual Instinct. By James Foster Scott, M.D. E. B. Treat & Co., New York, 1898.

Primary Focal Hæmatomyelia from Traumatism—A Frequent but Often Unrecognized Form of Spinal-Cord Injury. By Pearce Bailey, M.D. Reprinted from the Medical Record, November 19th, 1898.

The Abuse and Dangers of Cocain. By A. Scheppegegrell, A.M., M.D. Reprinted from The Medical News, October 1, 1898.

The Surgical Treatment of Uterine Myomata. By Henry O. Marcy, A.M., M.D., LL.D. Reprinted from the Journal of the American Medical Association, September 10, 1898.

The Dermal Coverings of Animals and Plants. By B. Merrill Ricketts, Ph.B., M.D. Reprinted from the Cincinnati Lancet Clinic, August 20, 1898.

Serpents and their Venom, Copperhead, Coral, and Rattlesnake. By B. Merrill Ricketts, Ph.B., M.D. Cincinnati Lancet Clinic, September 3, 1898.

Deaths (Ten), Surgical and Causes. By Merrill Ricketts, Ph.B., M.D. Reprinted from the Cincinnati Lancet Clinic, June 4, 1898.

Intestinal Auto-Intoxication. By Charles D. Aaron, M.D.

Stomach Disturbances Caused by Hernia of the Linea Alba in the Epigastrium. By Charles D. Aaron, M.D. Reprinted from the Medical Record, November 20, 1897.

Transillumination of the Stomach with Demonstration on the Person. By Charles D. Aaron, M.D. Reprinted from The Medical Age, June 10, 1898.

Chronic Catarrh of the Stomach. By Charles D. Aaron, M.D. Reprinted from the Pharmacologist.

The Causes and Conditions of Pulmonary Tuberculosis, and How to Avoid Them. By Edward O. Otis, M.D. Reprinted from The American Journal of the Medical Sciences, November, 1898.

Are Complete Castrates Capable of Procreation? By F. R. Sturges, M.D. Reprinted from the Medical News, October 8, 1898.

Vitality, an Appeal, an Apology, and a Challenge. By Lionel S. Beale. Reprinted from the *Lancet*. London, J. & A. Churchill, 1898.

Some Observations of Interest Regarding the Course and Management of Cataract. By J. H. Woodward, B.S., M.D. Press of George L. Goodman & Co., 1898.

Auenbrugger and Laennec, the Discoverers of Percussion and Auscultation. By Edward O. Otis, M.D. Reprinted from the *Boston Medical and Surgical Journal*, September 22, and 29, 1898.

The Dangers of Specialism in Medicine. By L. Duncan Bulkley, A.M., M.D. Reprinted from the *Bulletin of the American Academy of Medicine*, Vol. III., No. 7.

Chloroform, Its Absolutely Safe Administration. By Robert Bell, M.D. Robert Love Holmes, Glasgow, 1898.

Glaucoma with Detachment of Retina. By William Cheatham, M.D. Reprinted from *Annals of Ophthalmology*, July, 1898.

The Relation of Suppuration to Shortening of the Limbs in Tuberculous Disease of the Hip-Joint. By Russel A. Hibbs, M. D. Reprinted from the *New York Medical Journal*, November 5, 1898.

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Original Communications.

ABSTRACT OF AN ADDRESS ON A PROPOSED SCHEME FOR A DOMINION MEDICAL COUNCIL.*

BY

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As you are all aware, by the British North America Act, the subject of education was placed within the exclusive jurisdiction of the Provincial Legislatures. Section 93 of that Act reads : " In and for each Province the Legislature may exclusively make laws in relation to Education, subject and according to the following Provisions." These provisions do not, however, interest us, as they have reference entirely to common schools. This fact would give one the impression that professional education was not meant to be included in the section, or that it was overlooked or forgotten by those who were responsible for the framing of the act.

The Confederation of the Provinces had scarcely been consummated when our profession realized that a mistake had been made and that the multiplicity of medical boards throughout the Dominion would lead to great abuses and untold complications. Therefore we find the Canadian Medical Association at one of its earliest meetings, in 1869, suggesting a Dominion Medical Bill, called "The Medical Act of the Dominion of Canada." This bill, most comprehensive, was presented before the Association at the third meeting, in the city of Ottawa; and after a long and somewhat acrimonious debate, was finally abandoned; and so far as I know, was never brought up for reconsideration. Doubtless the fact that the profession in Ontario had, in the meantime, put into operation their own medical act, militated against the greater scheme. I am inclined to think that other reasons for its early demise are to be found in the attempt made, practically to expunge the provincial boards, and also to give a preponderating influence to the universities.

* Read before the Montreal Medico-Chirurgical Society, March 20, 1898.

Nothing further was done however in this direction until a very few years since, when at the meeting of the Canadian Medical Association in Kingston, a committee was formed to discuss and report upon the question of interprovincial registration or some scheme of reciprocity, all with a view to harmonizing the practice of the profession throughout the Dominion, but more especially on the frontier settlements of the various provinces.

Little of a practical character was accomplished until last year, when the committee reported very fully, making among other recommendations the following: "That so soon as the various councils of the Dominion shall establish an examining board of the Dominion conducted by examiners appointed by the medical councils of the several provinces, their candidates passing a successful examination before said board and obtaining a certificate to that effect, shall be entitled to registration in the several provinces of the Dominion on payment of the registration fee, providing they are not guilty of infamous or disgraceful conduct in a professional respect.

"Your committee desire to recommend that further efforts be made to ascertain the practicability of federal legislation leading to the establishment of a central qualification which will also place the profession in Canada upon an equal footing with that of Great Britain, and that Dr. Roddick be authorized to take the necessary steps in said matter.

"We further recommend that this association shall appoint a committee who shall consider and recommend the details as to the number of examiners to be appointed, the method of conducting examinations the fees to be charged, and other necessary details to bring the afore-said scheme into active operation, which details the officers of this association shall, with the foregoing, send to each of the respective councils for approval."

The following were named a committee to strengthen Dr. Roddick's hands before the Government:—Dr. McNeil, Prince Edward Island; Dr. Muir, Nova Scotia; Dr. Walker, New Brunswick; Hon. Dr. Marcil, Quebec; Dr. Williams, Ontario; Dr. Thornton, Manitoba; Dr. Bain, Northwest Territories, and Dr. McKechnie, British Columbia.

(The delegates from Quebec on the committee could promise nothing with regard to a central examining board for the Province of Quebec, the universities having already positively refused to surrender their charter rights).

Feeling the responsibility of this charge, I have been engaged more or less, ever since the meeting, collecting information from various sources (among others from the law officers of the Crown) and am now in a position to place before the profession of Canada a scheme which if acceptable to the various medical boards of the Dominion, may I trust with some modifications, become law at no distant date.

At first sight it would seem as if any plan were impossible that looked to united action. The Dominion Parliament cannot, on the one hand, infringe on the Provincial jurisdiction, while, on the other hand the Provincial Legislatures cannot unite in creating a central or federal medical board, because their powers are, in each instance, confined strictly to their own territory. If this opinion be correct, any scheme looking to interprovincial registration, or in other words any bargain made between the Profession in the various Provinces, or between the Boards as representing the Profession, would be *ultra vires*.

Under Section 91 however, of the British North America Act, the Dominion Parliament has power "To make laws for the Peace, Order and good Government of Canada, in relation to all matters not coming within the Classes of Subjects by this Act assigned exclusively to the Legislatures of the Provinces." Under these general terms it is believed that the Dominion Parliament may create a corporation for such objects relating to medical education and practice as are of general Dominion interest and importance, and as are beyond the Provincial powers.

Uniformity of medical education and the promotion of interprovincial registration are just such objects. The plan by which it is now proposed (for our purpose) to effect them is as follows:—

By an Act of the Dominion Parliament, a corporation may be created called, let us say *The Dominion Medical Council* which would be composed of medical practitioners from each province and from the North-west territories. The principal function of this council would be to register all persons who have complied with certain requirements, as to education and training for the practice of medicine and surgery, and all applicants who shall have complied, would receive what might be termed Dominion registration by the council.

This registration would, however, *per se* confer no right to practise in any province of the Dominion. The Dominion Parliament has, of course, no power to make such an enactment; but it is within its power to enact that such registration shall alone confer the right to practise in any of the territories over which it has direct legislative control; and it may provide that such registration shall be a condition of employment in any medical capacity in the active service of the Dominion, as for example, the quarantine service, penitentiary surgeons, mounted police surgeons, the surgeons of the militia force generally, etc. Besides another important result of the establishment of such a system would be that Medical practitioners registered under it could claim registration under the Imperial Medical Act of 1886, without undergoing further examination. By this Act (as you are aware) where parts of a British possession are under both a central and a local legislature, the authority of the central legislature is requisite to entitle a

colonial practitioner to British registry. Under the existing systems of provincial registration, Canadian practitioners are debarred from entering the extensive field of medical employment in the various departments of the Imperial service, such as for example, the army and navy, the Indian medical service, the colonial medical services, medical service under the Board of trade, including ships' surgeons, etc., also from employment as sanitary officers in the United Kingdom.

At this point, however, the powers of this council would cease. *In order to bring about what we most desire*, viz. interprovincial registration, all the medical boards in the Dominion would have to be consulted, and their consent obtained to the passage of a short Act in their own Legislature, giving the right to any person registered under the Dominion Act to practise in any province, subject, of course, to the payment of any fee that the Province may impose. It will have to be shown further that the person obtaining Dominion registration has given evidence of possessing qualifications at least equal to those required for registration under the existing law of any Province. In other words, the educational standard as to preliminary examination for study, the professional curriculum followed and the final examination must be fixed by the Dominion council at a level as high as or higher than that of any Province, with power in the council to keep it always so; and in case of failure at any time to maintain the standard, the Governor-General in Council might have power to intervene.

In the case of some of the Provinces, where the medical councils already possess the power of determining such equivalents, this matter could, perhaps, be arranged directly by these Councils. The medical councils of Ontario, Nova Scotia and the Northwest Territories have by recent enactments obtained such powers.

It will be observed that the proposed plan avoids in every possible way any encroachment upon the exclusive right of the Provinces as to maintaining their own system of medical education and registration. *I fully realize that any scheme, to have a sound constitutional basis and prove acceptable in working, must not encroach upon the provincial autonomy.* The various provincial medical boards or councils, (as they may be termed) shall continue their work of examination and registration as before, and to them shall be left all questions of taxation, discipline, etc. In a word, the establishment of a Dominion Medical Council would simply provide a direct and efficient way of interprovincial registration, while promoting a high level of professional education.

One of the most difficult problems in connection with this subject is the composition of the proposed council. It is evident that it must be thoroughly representative of the Provinces; and as it will have to deal with professional questions, it should be kept above the plane of politi-

cal interference. The matter, however, being one of great public importance, and the assistance of the Dominion Parliament being invoked, some provision would doubtless have to be made for the representation of that interest.

Let me suggest, then, that a Provisional Council consist of three classes of members, all of whom would be registered medical practitioners:

(a). One from each Province, including the Northwest Territories, to be appointed by the Governor-General in Council.

(b). One from each Province, including the Northwest Territories to be appointed by the Medical Council of the Province.

(c). The President of each Provincial Medical Council to be an *ex officio* member.

This would give a council of 24 members.

It is a question whether all the Provinces should have an equal number of members, in the council as permanently constituted, or whether the representation should be in some measure graded according to the relative number of practitioners in each province. In any case it would be desirable to keep the council of moderate number, for ease and efficiency of working, and to secure a representative majority at all times.

Now, so far, the outline of the proposed scheme deals only with students of medicine wishing to qualify themselves for practice in all or any of the provinces which accept Dominion registration as sufficient evidence of professional capacity.

With regard, however, to medical practitioners actually practising at the time of the passing of such an act, should the right be given them to avail themselves of the privileges under the act admitting them to practise in other provinces than that in which they had originally qualified? Should it be retroactive?

Many objections would doubtless be raised to such a clause, especially by the profession in the younger provinces who might dread a stampede in their direction. This could readily be overcome, however, by making some time limit, say five or seven years of actual practice, coupled with evidence of good professional standing. Medical men in practice for that length of time would not be so likely to migrate as the more recent graduates.

There are many matters of detail that might be introduced, but my chief purpose to-night is to excite a discussion on the general practicability of such a scheme as that which I have endeavored to outline.

The present state of affairs in connection with the practice of our profession in this country is anomalous, and exists perhaps, nowhere else. Where we have, simply imaginary lines or narrow rivers separating our provinces the present arrangements must continue to lead to hardships, both to the public and to medical men themselves, and sometimes to

grave abuse. Besides, the provinces are all congested, the number of medical men being far too numerous in proportion to the population. This scheme would not only lead to a more equable distribution, but it would throw open the entire British Empire to our Canadian youth who have adopted medicine as a profession.

Discussion.

SIR WILLIAM HINGSTON referred to some of the earlier efforts made by the profession, from time to time, in somewhat parallel lines. Years ago a discussion had taken place on this subject at a meeting of the Montreal members of the Canadian Medical Association when a project was submitted which seemed to ignore provincial rights and the result was very nearly the smashing up of the association. It was felt by the majority at that meeting that the proposed changes would be interfering with the rights and privileges of the provinces which alone, by the British North America Act, belonged to them. Nothing further had been done until McGill University moved to obtain Imperial registration for the Dominion. The application, however, had gone through the wrong channels and had resulted in nothing. Two or three years afterwards, Sir William, as President of the College of Physicians and Surgeons of the Province of Quebec, after having canvassed by letter every governor of the college, had made an effort and the more influential members of the British Medical Council were in favour of acceding to the desire of the college. On referring to their legal advisors, however, they were told that registration could not be given to one province without giving it to all: that, in fine, the British authorities could not deal with the separate provinces in detail, but with Canada as a whole.

With regard to the scheme submitted by Dr. Roddick, the speaker thought that it was of a practical nature and likely to be successful; but he would suggest the advisability of the avoidance of details. All efforts should be confined to general principles and details could be left to be arranged in the by-laws of the Council itself when appointed. It would be unwise to have all the details form too much the subject of discussion. If the several principles were accepted, the details would follow as a matter of necessity. The scheme would have his heartiest support as he had long recognised the advantage of British registration to our qualified colonial practitioners.

Dr. E. P. LACHAPELLE had been much interested in the scheme proposed by Dr. Roddick. It was well known that several futile efforts had already been made and we must congratulate Dr. Roddick on bringing forth a new scheme which showed that he (Dr. Roddick) had been very carefully looking into all the details and had foreseen all the difficulties.

He sincerely hoped that it would be possible with good will and good work to make it successful. There was no doubt that it would be a great improvement to have such an understanding between the provinces and

be able to enjoy Imperial registration. There was no question but that the British North America act was framed in such a way as to make interference of the Federal Government on this matter difficult without all the provinces joining in the effort. The speaker was in full sympathy with the general lines of the scheme, both as a member of this society and as President of the College of Physicians and Surgeons of the Province of Quebec, and would do all in his power to make it a success.

Dr. ROBERT CRAIK had not prepared himself to take part in the discussion of this scheme of Dr. Roddick's, as he had not heard the direction in which the proposed act was to develop. His experience of the efforts directed towards securing Dominion registration probably dated farther back than that of any one else present. He had been a member of the Canadian Medical Association at the time when the matter, as referred to by Sir William Hingston, had been brought up, and he had been hopeful up to the very last minute that the scheme then proposed would carry. After having been fully and mostly favourably discussed by representatives from every province it was voted down by an immense majority. He did not wish to throw cold water on the scheme, no one deprecated such a spirit more than he, but he would have them remember that sometimes projects such as this failed from the promoters being a little oversanguine. In this case any difficulty which might tend to bring disaster about should be avoided now. The scheme as proposed was, in his opinion, workable if it could carry various interests with it. If the antagonism could be overcome or put to sleep all would be well. It was all very well to ignore details, but it must not be forgotten that they were apt to come up at an inconvenient time and wreck the whole scheme. His advice was to try and find out the interests of each province by obtaining the views of influential members of the profession and harmonise them as far as possible. Let each concede small matters and so reach a common ground on which all can act.

Dr. Craik stated that the difficulty with regard to the obtaining of Imperial registration was that the British act of 1868 dealt only with the federal centres of the provinces and in that way the individual provinces were shut out. He was not clear as to how it was proposed to overcome this.

In concluding, the speaker earnestly wished the scheme success, and that eventually it would reach a workable basis and so be sure of that success.

Dr. R. F. RUTAN congratulated Dr. Roddick on his success in overcoming the obstacles which had so long presented themselves to a uniform enregistration in Canada. The whole profession was dissatisfied with the present condition of affairs. The various medical councils themselves are continually engaged in altering by-laws, if they are not

actually in the Legislature itself, asking for new amendments to their Acts. The medical teaching bodies find the greatest possible difficulty in conforming with the requirements of all of the provinces of the Dominion and do so only under protest. Students entering the profession complain bitterly in many provinces of the technical and arbitrary obstructions placed in the way of enregistration. The profession as a whole, while enjoying a certain degree of protection through their medical boards, chafe under the restrictions imposed on them and feel strongly their very limited field of work. The profession as a whole, as represented by the Dominion Medical Association, has annually for some years discussed the question of reducing to harmony the present inharmonious relations existing in the various Provinces. Eight separate medical boards exist in Canada, each with its own regulations regarding matriculation, courses of study, and requirements for degree, etc. The incorporated profession of each province is justified in obtaining such legislation with a view of maintaining the dignity and usefulness of the profession and for the protection of a large section of the public against the effects of its own ignorance and credulity. All medical boards unfortunately are not satisfied with measures which require a sound medical education and good moral character as a qualification for entering the profession, but under the thin guise of raising the standard of the profession, have become purely protective organizations requiring either an excessively high standard of matriculation, an excessively long period of study, or an exacting, stringent legislation of a prohibitive character regarding enregistration of matriculation. There is little uniformity in the requirements of the different provinces at present, neither students nor practitioners are enabled to transfer their registration from one province to another, except in a few cases. The two oldest and most prosperous provinces, Ontario and Quebec, although adjoining, have no arrangements by which a practitioner near the border can leave his own province to attend a patient. There is a wide spread feeling in the profession that this condition of affairs should disappear and that the Dominion of Canada should not stand alone among the larger British Dependencies without the right of having her licensed practitioners enregistered by the general council of medical education of Great Britain without examination.

Two remedies have been suggested:—One the establishment of reciprocal relations among the provinces, and the other, the plan which has been so well elaborated by Dr. Roddick, namely Federal or Dominion enregistration. Owing to the fact that the Province of Quebec has no central examining board and has thus no fixed standard for professional examinations, it was found impossible to make even a beginning towards reciprocal enregistration between the different provinces, but

apart from this another objection of a more fundamental character exists, inasmuch as the tendency of any system of reciprocity would be to reduce the average standard of medical education; because the lowest requirements, and the weakest colleges in the Dominion would be most popular. It would thus tend to retard rather than advance medical education and should be opposed by all of those who have the interests of medical education at heart. It is true that reciprocal relations would appease the practitioner and would relieve the profession of many of the grievances it suffers at present, but it would not relieve the teaching bodies nor aid them in keeping abreast of the advance of modern medical education, nor would it give our graduates the benefit of British enregistration.

A central examining licensing board, with qualifications as high, if not higher than those required by any province, under the control of the best medical teachers of the Dominion, would satisfy the demands of the student, the practitioner and the medical schools, and would bring about recognition of our licence through the British Empire. Difficulties certainly exist in carrying this idea into effect, some of which have been suggested by previous speakers and among which should not be forgotten the necessity of a double set of examiners for the requirements of French as well as English applicants and with a consequent doubling of the cost of the examining body. This can scarcely be done with the fees obtained from candidates alone, and even if the federal government were required to pay a portion of the expenses they would only be doing what is done among many of the European countries where the cost of a medical education is largely borne by the state.

The speaker concluded by stating that he felt sure that the principle of the establishment of a central licensing body of the whole Dominion would meet with the unanimous approval of the profession and would receive little or no opposition in its passage through the legislature.

Dr. F. J. SHEPHERD joined with the other speakers in wishing the scheme success and said that if Dr. Roddick succeeded in obtaining Dominion Registration for the medical men we would all forgive him for having gone into politics. Until he had heard Dr. Roddick's address he was to a great extent unaware of the difficulties in the way, which seemed to him almost insuperable. He should like to ask why the provinces controlled professional education. The act evidently only referred to general education. If he was not mistaken, we already have a Dominion Act by which surveyors can be registered for the whole country, the provincial boards still remaining in force. If for surveyors, why not for the medical profession? The weak point about Dr. Roddick's scheme seemed to be the doubt of getting it accepted in Great Britain, for if a man with a Dominion Registration could not practice in his own country it was not likely Great Britain would allow him to

be registered there. However, certain provinces might accept it, such as Manitoba, the Lower Provinces, and Quebec, and the others in time would be forced to fall into line. He thought one difficulty would be the Homœopathists and others of that ilk who would also demand Dominion registration. At any rate they would through their influence with members block the bill unless they were included. The first thing was to have one preliminary standard for all the provinces and the plan suggested by Dr. Ruttan he thought a good one.

In conclusion, Dr. Shepherd said that the plan suggested by Dr. Roddick was the only feasible one in view at present and ought to have the hearty support of the profession throughout the Dominion.

Dr. LAPHORN SMITH thought that the present time was a most favorable one for the movement which was being so ably furthered by Dr. Roddick, our popular and influential representative in the House of Commons. Not only have we Sir William Hingston to support him in the Senate, but at the present time the Provincial Legislatures are all in accord with the Federal Parliament, and will do almost anything which the latter may ask of them. The colonial secretary Mr. Jos. Chamberlain is most favorably disposed towards Canada, and with his immense influence could obtain for us any legislation we might require. With the whole profession in Canada in favor of it, and the Provincial Medical Boards and Legislatures raising no objection to it, he thought that there would be no insurmountable difficulty in getting a short act passed by the Parliament of Canada, and even if necessary, by that of Britain.

He would, however, like to point out a much simpler method of obtaining what they desired; namely, by changing the name from Dominion Board to University of Canada. There was nothing in the British America Act to prevent the Parliament of Canada from granting a charter to a university of Canada with power to grant degrees in medicine, the holders of which would be entitled to practise in all parts of Canada. The act granting this charter could if necessary be ratified by the British House.

As the University of Canada would be an examining body and not a teaching one it would in no way interfere with the rights of the provincial boards or medical schools, which would continue to carry on their work precisely as they are doing at present, for those who were satisfied to practise in their own province only. Those who wished however to practise all over the Dominion must pass through a uniform portal the barriers of which should be at least as high as those of any provincial board. And that portal would be the matriculation and final examinations of the University of Canada. Even when armed with this degree its holder must obey the same regulations and pay the same fees annually

as the other practitioners of the province in which they desire to practise. By calling it the University of Canada it would become a national institution and an object of national pride, so that the Government of Canada would come to its aid financially during the first few years, after which it would be self supporting. Dr. Laphorn Smith did not see any difficulty either in the matriculation or final examination. Some man of high standing would be appointed in each provincial capital or chief city to hold the entrance examination simultaneously. Sealed examination papers would be sent to him some days before but would only be opened by him after all the candidates had entered and the doors were locked. This would be taking place at the same hour and minute in the seven distant cities. When the allotted time was up the papers would be signed and sealed by the examiner and forwarded to the central committee, who, without knowing the writer's name, would apportion the merited marks, and forward certificates. On presentation of these certificates and proof of five years study of medicine the candidates could come on a fixed date every year before the examiners of the university who would be chosen from the present provincial examiners or other eminent teachers. As to the clinical examination, the committee on clinics together with all the candidates could take a two hour and a-half ride down to Montreal and hold the examinations at the big hospitals, and return to Ottawa the same or the following day. As soon as the results of these examinations had been added to the others the convocation could be held and the degrees be signed and given by the Governor General. The examination might be more severe in practical subjects for those who had been over ten years in practice, and more severe in theoretical subjects for those who had just left the medical school. The fees should not exceed fifty dollars which with a government grant of ten thousand dollars a year for ten years would be ample to defray all expenses as examinations would be held only once a year in the month of June.

THE CHAIRMAN (Dr. LAFLEUR) asked if there would not be some difficulty in regard to holding the final examinations which would require to be largely clinical.

Dr. RODDICK, in reply, stated that he was much pleased at the way in which the matter had been discussed, and he was encouraged to go on and if possible bring it to a satisfactory conclusion. Some months ago he had presented the scheme before a representative meeting of medical men in Toronto, including some members of the Ontario Council, and it had met with their approval. With regard to the question of detail, while he felt it was well not to go too far, one had to go a certain distance. There were two or three points of importance, for instance, which had come up at the Toronto meeting; one was with regard to ma-

triculation, and another as to how the finals were to be held. It was necessary to have the details of the scheme worked out sufficiently to be able to give satisfactory replies to all questions that might be asked. Dr. Roddick expressed satisfaction at having the endorsement of the President of the College of Physicians and Surgeons of Quebec, Dr. Lachapelle. He looked upon the scheme as well nigh impracticable unless every province was willing to come into it. The main feature of the measure was that candidates who had passed the Dominion examinations would be allowed to practice in any province by paying the ordinary registration fees of that province. The question of finances was a very serious problem. There would be a Dominion registration fee, and the man who was going to have all the privileges accorded would not object to paying a reasonable fee. Fifty dollars a head would probably cover all expenses, and the expense of examining would not be very great. The final examinations would, of course, have to be held where there were hospitals. It was not intended to have the bill brought up at the present session of Parliament, but to wait until the various medical boards had proclaimed their opinions. Besides, Dr. Roddick was bound first to report to the Canadian Medical Association at the meeting in Toronto in August next.

NOTES ON THE ETIOLOGY AND PATHOLOGY OF
"CATHETER FEVER."* WITH THE RESULTS
OF AN INVESTIGATION AS TO THE
PROPHYLACTIC TREATMENT.

BY

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Not infrequently, the medical profession is startled by hearing of the sudden death of an apparently healthy individual following, merely, the passage into the bladder of a catheter or sound, but they do not hear of conditions, which, though alarming enough, are saved from publicity through their more favourable termination. I speak of what is commonly called "urethral chills," a condition far more common than would be at first supposed, but which is readily demonstrated by simply making it a routine practice to question every patient, say, forty-eight hours after passing a sound, as to their sensations since the operation. I feel sure that any person, after having made such a practice, will not feel that time is wasted in studying how to avoid producing such a chill, while for those who may not investigate the matter on their own account, it will be only necessary to quote the words of Professor Rovsing, of Copenhagen, at the British Medical Association's last meeting, to excuse bringing the subject before your notice.

His words were:—"The very greatest number of urinary infections originating from the urethra are caused by surgical interference,—examination by cystoscope, introduction of bougies, catheterization, and litholopaxy. It seems, therefore, to me to be the urgent duty of us surgeons to consider carefully by what means we can avoid the infection of our patients as the consequences of this are incalculable. At first, the general opinion was that infection was only caused by the introduction of unclean instruments, and that infection of the urinary tract might be prevented by using sterile instruments and by washing the external orifice of the urethra. The desired result was, however, not forthcoming and in the majority of hospital catheterizations, cystitis, etc., appeared and appears still with almost the same frequency as before, although instruments are disinfected most carefully."

That we may properly consider the treatment of this condition it is necessary to review the most modern views on the etiology and pathology

*Collected from the papers read at the British Medical Association Meeting in 1898.

of this disease; and these are set forth in the discussion which took place at the meeting of the British Medical Association, already referred to, on "The Origin, Effects, and Treatment of Septic Affections of the Urinary Tract."

One of the peculiarities of the human body is that certain parts or organs may be grouped together into systems, and the component parts of such systems have more or less relationship to each other, perhaps by continuity or perhaps simply by function. In these cases of relationship it is curious to notice how often the components of these systems are further related by having a similar nervous, blood, or lymphatic supply; and these relationships are also made more apparent by the liability of one member of a system to become diseased if another member is already affected, even though this disease can be proven not to have been communicated to the second organ or part by direct continuity. Let us first shortly consider the connection by continuity of the component parts of the genito-urinary system. The urethra, whose mucosa is covered with follicles, is connected with Cowper's glands, the seminal vesicles, and the prostate, and is continuous with the bladder. The bladder is connected by the ureters with the kidneys; and here it is at once apparent that if one part is infected it should be physically the easiest thing imaginable for that disease to be communicated to any other part of the genito-urinary system. This is shown by the manner in which, when the ureters are dilated and the fluid columns between the bladder and the renal pelves are thereby rendered continuous, bacterial invasion of the kidneys takes place through these columns of urine from a septic disease of the lower urinary region. But, unfortunately, this extension by direct continuity is only one of two well-known paths. As Newman has pointed out, the course which the lymphatics pursue from the bladder is one of direct distribution along the submucous connective tissue surrounding the ureters to the capsule of the kidney. They then penetrate the renal substance, and thus, in those acute cases following urethral instrumentation in which the kidney is affected without suppuration, the virus is conveyed to the cortex of the kidney by the lymphatic channels. This connection accounts for those cases of very acute septic absorption resulting from injuries of the lower urinary tract, but especially of the upper portion of the urethra and the neck of the bladder, in which a violent septic poisoning is induced without the mucosa of the ureters or renal pelves being affected, or, if so, only implicated in the inflammatory process to a slight degree. These cases may terminate fatally in forty-eight hours and on microscopic examination the whole of the kidney is found to be completely permeated, and the walls of the bladder and the ureters are likewise infiltrated with septic micro-organisms.

In the foregoing remarks on infection we have implicated ourselves in the etiology and pathology of the disease under discussion. These two elements of this disease have in the past been much disputed, but roughly we may state that the two great theories of the disease were:—

(1) The septic theory: (2) the nervous theory.

Recently it has been clearly demonstrated, I think, that neither sepsis alone nor the nervous system alone is responsible in any given case, but, in all probability, the two factors acting together have produced the disease,—sometimes the septic symptoms predominating and at other times the nervous.

Guyon showed that microbes may even enter the bladder without bad effect, if the bladder resistance is normal. If, however, it be diminished as, for instance, by a foreign body, injury, or residual urine, trouble may be anticipated. When we remember how each instrumentation is known to cause a modification of the urethral circulation,—any instrument introduced really being a foreign body,—and when we consider the influence of the nervous system upon inflammatory processes as well as upon resistance (either by impairing the nutritive activity of the part or by diminishing phagocytosis), it is difficult to say to what extent instrumentation of the urethra or bladder acts by reflex irritation through the nervous system, and to what extent by the introduction of sepsis. The influence of the nervous system is demonstrated in those cases where the passage of a sterilized bougie may be followed by the complete suppression of urine, which suppression is probably due to a reflex spasm of the renal arterioles. In such cases the circulation in the bladder is also interfered with and, should any contamination have been introduced, the danger of acute sepsis of the whole tract is very great. It seems very doubtful, however, whether the nervous system alone can be at fault in any case of urethral chill. But, as Newman pointed out, in any case, if the bladder fails to empty itself completely, as from urethral stricture, local or general paralysis, enlargement of the prostate or other cause, the danger of sepsis by the most minute particles of infection cannot be exaggerated. In such cases the mucous membrane loses its resisting power and the retained contents of the bladder become contaminated by even the smallest inoculation of infective material introduced from without. The discovery that the normal urethra swarms with microbes, often pathogenic, explains the cause of the disappointment of those who, when antiseptic treatment was first introduced, supposed that infection was due to the non-disinfected instrument; and great was their surprise on finding that the number of cases of catheterization infection was but slightly reduced in spite of the most careful sterilization of instruments. The number of microbes is greatly increased in those cases in which instrumentation is called for, e. g., examination

by cystoscope, introduction of bougies, catheterization, and litholopaxy; and coincidently with such increase in the bacterial habitant of the urethra is the danger of infection increased.

Now that we have seen that not only is sepsis a most important factor in the origin of urinary fever, but that disturbance of the nervous system will facilitate absorption, that although the instruments may be perfectly sterile, chill may be caused by displacing pathogenic bacteria and especially if this displacement be combined with injury by careless instrumentation, or with an already existing lesion, we must consider what can be done in the way of prophylaxis against this disease.

Two measures may be discussed; first, that which will lessen deleterious nervous influence, and secondly, that which will prevent sepsis. To combat the first, our only resource is to perform the operation with the utmost gentleness, and to carry this out we should never use more than one instrument at the first *séance*. A steel sound of smaller calibre than 20 French, should never be used. In the case of extremely nervous patients, it is better to use only soft bougies until they are accustomed to instrumentation. Sounds should never be passed more than twice or at most, three times a week, and it is found safer not to increase the calibre of the sounds by more than one or two sizes at a *séance*, the surgeon taking great care not to hurt his patient by the introduction of the instrument. If one cannot be passed through a stricture without hurting the patient it is best to employ a smaller sound, or even a bougie for a time, and only return to the large one when it is felt that it can be used without giving pain to the patient. In introducing a sound, when its progress is obstructed by the triangular ligament, it is preferable not to lift the sound's point to get it through, but to relax the subpubic ligament by pressure from above.

We must now consider how it is possible to guard against septic absorption, when it is known that the urethra is generally considered to be irretrievably septic, and thus we come face to face with certain dictums almost as unchangeable as the laws of the Medes and Persians. (1) Never use an instrument until the urine has been rendered apparently sterile by the use of such agents as salol, boracic acid, or, perhaps best, urotropine. (2) Always be sure that instruments are absolutely sterile for, although we know of many instrumentations with sounds simply washed in hot water and perhaps rubbed down with a sterile cloth, often without the slightest ill effects, we must confess that it is preferable to use none but boiled instruments. (3) Never pass a sound into the bladder if the stricture is in the anterior urethra alone; as the passage into the bladder certainly increases the danger of septic absorption.

In some hospitals another prophylactic measure is used. The bladder is injected through a catheter with Tiersch's solution which is thus

passed out by the patient. This has proven to be a most valuable addition to former treatments, but the objections to this scheme of treatment are that even a soft catheter is more or less an irritant to the mucosa, already disturbed by the passage of a sound; and again the soft catheter may force into the bladder some of the lubricant used on the instrument and which has adhered to the urethral mucosa. The disadvantage of this consists, not only in the possibility of introducing micro-organisms from the urethra in the lubricant, but also, in the case of an insoluble lubricant, by the theoretical possibility of the matter introduced forming a nucleus for stone. It may here be interesting to note that Rovsing found in a post-mortem examination of a patient dead from typhoid fever, the urinary bladder half-filled with vaseline collected there by daily catheterization for two months. Another objection is that the urethra is but imperfectly and perhaps superficially washed out by the extrusion of the injection from the bladder.

We have now stated the prophylactic measures most usually employed and have seen that, although the injection of an antiseptic solution through a soft catheter into the bladder is far better than doing nothing in the way of washing out the bladder, still this method has certain objections. And here, perhaps, it will be well to consider other matters which may be of the utmost importance.

Swinburne has demonstrated that an instrument should never be passed into the bladder while a discharge containing micro-organisms is present, thus showing the necessity of the constant use of the microscope by all genito-urinary surgeons. This rule is made practical through the knowledge that with irrigations by the method about to be explained, all micro-organisms seen in a discharge can be removed for a period long enough to permit the safe use of the sound, and which, if used properly, will have the mucosa in a normal condition before their return.

Another important point is that a sound or other instrument should not be used without first thoroughly irrigating the urethra, and if possible the bladder also, with a hot antiseptic solution, and repeating this immediately after instrumentation. This second irrigation, however, may be supplemented or its place taken by an instillation of 2 per cent. protargol into the bladder. Here I may mention an improvement suggested and adopted by Swinburne. A set of sounds which resemble an Ultzmann's syringe are used by him. The sound is tunnelled, and so made that it may be screwed to a syringe barrel. Thus, before withdrawing the sound, the surgeon may instill into the bladder about an ounce of a 2 per cent. solution of protargol. Rovsing, also, is a firm believer in the instillation of a germicide into the bladder after instrumentation, he having used for nearly ten years past a 2 per cent. solution

of silver nitrate, which he leaves in the bladder for three to four minutes and then has evacuated *per vias naturales*, following such evacuation by lavage with sterilised water. He claims that in the hundreds of cases in which he has used this method he has had no failures. But, according to some observers on this continent, he hardly goes far enough, for, to use his own words, he only employs it "in all cases of single introduction of an instrument under circumstances where infection is to be feared." The only other objection to the method is that it consumes more time than irrigation from the meatus and does not go so far as irrigation or instillation with protargol. It has the additional danger of causing some pain to the patient.

The irrigation of the urethra and bladder with hot permanganate solution from the meatus which has been referred to is done in the following way :—

The irrigator is slung five feet above the patient's penis. The patient sits or stands holding a pus basin under his penis with his left hand. The surgeon places himself on the right side of the patient and, grasping the penis with his left hand, irrigates with his right, alternately ballooning the urethra with the fluid and allowing it to escape. The urethra must be washed in this way inch by inch, first washing the meatus and guarding against the driving back of septic material from the first inch into the parts behind by tightly compressing the urethra at intervals of one to two inches until the pubic bone is reached. When the urethra has thus been carefully washed the bladder must next be washed out. This is done by gently filling the urethra and asking the patient to urinate, and in all probability his efforts will be rewarded and the surgeon will feel the purring sensation characteristic of the unobstructed flow of the solution into the bladder. Here it is necessary to be extremely careful not to hurt the patient. If he cannot voluntarily take it into his bladder by trying to urinate, not to let him persist, as the risk is run of causing an epididymitis, which will certainly not be appreciated by the patient. In the event of being unsuccessful with this it is better to risk the irritation caused by a soft catheter (after the danger of introducing septic material has been abolished by the previous copious irrigation of the urethra), and instill into the bladder one ounce of a 2 per cent. solution of protargol. The only objection that can be raised to this method is the time consumed; but results will repay this. I have passed several hundred sounds after using this method without producing a chill, and Valentine claims that he has passed thousands without a chill; even going further and stating that a chill does not follow instrumentation and copious irrigation with potassium permanganate. Not only is Swinburne, who perhaps of all men has had the greatest experience in the use of irrigation in urethral disease, strongly in favour of this method, but I understand that MacEuan of Dundee also approves of it.

Case Reports.

TWO CASES OF MYOMECTOMY : ONE DURING PREGNANCY.*

BY

A. LAPHORN SMITH, B. A., M. D., M. R. C. S. **ENGLAND.**

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Case 1. Removal of a Fibroid Tumour from the Pregnant Uterus.—Recovery.—Normal Delivery.

Some ten months ago I showed to the Society a fibroid tumour, rather larger than a large orange and weighing over a pound, which I had removed from a Mrs. B., who at the time was two and a-half months pregnant. Her physician, Dr. MacNamara, gave me the following history:—She began to menstruate at the age of twelve, her periods being always painful and scanty. She was married at the age of twenty-four and became pregnant fifteen days later, but miscarried at seven weeks, in December 1897. After this miscarriage she felt a lump in her right side which at that time did not trouble her very much. She became pregnant again on 12th January 1898, and almost immediately afterwards the lump in her side began to pain her and by the time she was two months pregnant she could hardly bear it. The tumour could now be seen and felt projecting under the thin abdominal wall. She sent for Dr. MacNamara, who diagnosed a fibroid tumour with pregnancy, and during two months he tried to relieve her pain by medicine but at the end of that time he felt convinced that something more radical would have to be done and for this purpose he called me in. Myomectomy was determined on, she then being two and a-half months pregnant. I operated at her own home, (on my portable table which only weighs eighteen pounds.) The abdomen was opened by a long incision, the tumour was grasped and drawn out and as it was evident that a good deal of sewing would be needed, the pregnant uterus was also brought out of the abdomen and laid on a sterilized towel. The uterus appeared exceedingly vascular so two pairs of clamps were placed on the uterine wall at the base of the tumour. The latter was then excised so as to form a sort of V-shaped stump, the large vessels of which were temporarily controlled by the clamps, while I was sewing the flaps firmly together with interrupted sutures. So far, hardly a drachm of blood had

*Read before the Montreal Medico-Chirurgical Society, April 10th, 1894.

been lost, but when I cautiously loosened one of the clamps for a moment, the bleeding was furious. I tightened it again and put in a second row of medium silk sutures turning in the peritoneal surfaces. Again the clamps were loosened and again the bleeding began, but much less in quantity, so that with a third row of very fine stitches passed with a fine needle the wound was made quite dry. The uterus was then dropped back into the abdomen and the incision was closed with through and through silk-worm gut stitches. She required only one small hypodermic of morphia and next day she felt, as she said, well enough to get up and go about. The pain which had troubled her for more than two months previously disappeared completely but she said she could feel the place on the front of the womb on the right side from which the tumour had been cut out. She was walking a month later.

When I showed the tumour ten months ago, it was the opinion of several members that a miscarriage would almost surely take place. On the contrary, she went on to full time, the 19th October, when she was delivered by Dr. MacNamara of a fine healthy boy, the labour being perfectly natural but a little difficult owing to its being a face presentation. I have recently seen her and the baby and can testify that they are both in perfect health.

Judging from this case and from several others in which I have removed tumours of various kinds and performed ventrofixation of the retroverted pregnant uterus without causing a miscarriage, I would have no hesitation about removing pustules, ovarian tumours, or fibroids, — provided that the latter were interstitial or subserous. — whenever they are dangerous or painful, even if the patient were in the midst of her pregnancy. In this case the tumour extended very nearly, but not quite, down to the uterine mucous membrane, but even if its removal had necessitated opening into the cavity, I do not think, provided the asepsis was perfect, that the result would have been any different.

Case II. Removal of Fibroid from Uterus followed by Ventrofixation and Removal of Hæmatoma of Ovary.

The great improvement in the technique of abdominal hysterectomy and the more successful results have led, during the past few years, to a rather too frequent resort to the total removal of the uterus and appendages in cases in which the gravity of the symptoms and the youth of the patients hardly justified such a radical measure. It is fortunate, therefore, that a healthy reaction has set in during the last year or two among the leading gynecologists, who are now doing their utmost to save the whole or at least a part of these organs, whenever it is possible to do so. The principal objects of this conservatism are:—(1) The desire to leave the woman in possession of her procreative powers: (2) To ren-

der the operation less dangerous: (3) To avoid the premature menopause. A few words on each of these points. (1st) It is now generally admitted that it is our duty to leave the woman the possibility of becoming a mother. Many women who have had no child, and others who have had one child and lost it, live in the hope of becoming pregnant sooner or later; but when we remove the whole of the uterus or both of the ovaries they know that the hope which they have cherished is no longer possible of fulfilment and they become utterly discouraged and lose all object in life. (2d) It is less dangerous in most cases to remove the fibroid alone sewing up carefully the cavity from which it has been removed. There are, however, exceptional cases in which it would be safer to remove the uterus but in these, by tying and cutting close to the tumour, the ovary on one side at least may be left, while, by amputating the uterus at the level of the internal os, the length of the vagina will remain unaltered. But the third reason is by all odds the most important, namely, the prevention of the premature menopause. For this reason I have during the last two years been leaving both ovaries or at least a part of one in every woman under forty in whom I have had reason to remove the tubes, one ovary, or the uterus, always excepting however the cases of cancer. I have at present under observation several women in whom the premature menopause was induced three years ago and who are still troubled with hot flushes and chills. In two of them I have tried extract of cow's ovaries without effect, although Jacobs of Brussels told me that he had employed it with marked success.

The following case is of interest because the tumour was interstitial and in removing it I could not avoid opening into the cavity of the uterus, and because this was not followed by any bad results. As she was past the menopause and unmarried my reason for not removing the uterus was solely because it was safer to leave it and there was no necessity for removing it.

Miss P., fifty years of age was sent to the Samaritan Hospital by Dr. Sylvester, on the 26th March. She had ceased to menstruate since three years ago but for the last year or two has been complaining of pain in the lower abdomen and back, which, in spite of persistent local treatment, grew worse and worse until she became unable to earn her living. On examination, a mass could be felt in front and one also behind the cervix, the latter swelling being very tender to touch. Both masses were firmly attached to the uterus so that it was difficult to say positively where the fundus was without using the sound. On opening the abdomen on the 28th March, the uterus was found to be retracted and bound down, and on freeing it, a tumour the size of a lemon was extracted from Douglas' pouch which proved to be a hæmatoma of the left ovary, the left tube being attached to it and closed with adhesions.

Occupying the whole of the front of the fundus was a hard fibrous tumour about the size of a lemon. Its capsule was split vertically and peeled off the anterior half of the tumour with the handle of a scalpel, but the posterior half of it was homogenous with the wall of the uterus, from which it had to be separated with the knife. In doing this a hole as big as a bean was made into the uterine cavity. By grasping the uterus firmly with my left hand at about the level of the internal os the bleeding was easily controlled, while half a dozen stitches of iron-dyed silk (made for me by Belding Paul & Co., silk manufacturers, of Montreal) were passed deeply through the sides of the incision without, however, going into the cavity of the uterus. When these were tied there was not a drop of oozing. The uterus when let go would fall into retroversion, so it was stitched up to the anterior abdominal wall with buried silk-worm gut. This patient has made a very quick recovery, requiring no morphine and being up on the tenth day. She is quite free from pain and expects to go to work in a few weeks.

CARCINOMA OF LARYNX.*

BY

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AND

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The patient whom this specimen concerns was a man of 55 years of age who consulted me at the throat clinic of the Montreal General Hospital six months ago on account of a huskiness which he said he had had for six weeks previous to his first visit to the hospital, due, the patient thought, to his having "taken cold."

Upon examination of the larynx at that time, six months ago, I found the huskiness was due to ulceration of the left true vocal cord on its under surface involving that portion of the cord attached to the vocal process. The extent of the ulceration as far as it could be judged by the laryngeal mirror, showed it to be an ulcer with irregular outlines and about 6 mm. long and 3 mm. broad. The surface was uneven and clean. The surrounding mucous membrane only moderately hyperæmic. The movements of this cord, namely abduction and adduction, were impaired only to a slight degree. There was no swelling of the crico-arytenoid joint of that side. The movements of the right cord were also slightly impaired and the right cord assumed a position nearer the middle line of the glottis, but not sufficiently near to interfere with respiration; therefore no stridor was present.

An investigation into the general health of the patient proved the absence of any tuberculous or syphilitic manifestations. There were no subjective symptoms, other than the alteration in the character of the voice. The patient himself in general appearance seemed to be enjoying good health; being a stout robust looking man. Careful examination of the glands in the neighborhood of the larynx failed to find any of them enlarged. The patient was placed on iodide of potassium in increasing doses, but without any beneficial results as regards the local condition after a period of four or five weeks. The patient was told of the probable nature of his case and advised to keep under strict supervision because of a grave possibility of a sudden attack of œdema of the glottis which might supervene at any time. In fact, preliminary tracheotomy was advised at that time, so as to place the patient beyond the occurrence of any such trouble.

* Read before the Montreal Medico-Chirurgical Society, April 10, 1898.

I saw nothing of this patient until hastily summoned by Dr. Semple, who told me that the patient whom I had seen at the Hospital was suffering from an attack he thought of œdema of the glottis which would necessitate immediate tracheotomy.

Upon seeing this patient I found him sitting up and breathing with considerable difficulty. Inspiratory stridor was marked; with retraction of the supra and infra-clavicular spaces and also the abdominal wall. His face expressed a great deal of anxiety and he had since my last visit become slightly emaciated. Immediate tracheotomy was advised and the patient removed to the Royal Victoria Hospital as speedily as possible and on his way to the hospital on one occasion his condition became positively alarming, being seized with a spasm of the glottis, but which fortunately passed off in the course of a few seconds. His condition when on the operating table was that of increased dyspnœa and the operation of tracheotomy had to be hurriedly undertaken.

The difficulty encountered in opening the trachea less rapidly than could have been wished for, was due to the unusual depth which the trachea had, even with the head well extended and a pillow supporting his shoulders, for it was found to be at a depth of about $3\frac{1}{2}$ inches from the surface: also another difficulty was the enlargement of the middle lobe of the thyroid. I may say here that the "low operation" was selected, not knowing how much more extensive the disease in the larynx had become since the last time I had seen the patient, five months previously.

On opening the trachea another difficulty was here met with, for it was found that the œdematous condition of the mucous membrane of the trachea had extended even below the site of the tracheal wound and thus it was found that the usual tracheotomy tubes introduced did not reach beyond this œdema, but the introduction of a catheter enabled the respiratory function to be carried on with relief to the urgent dyspnœa. Subsequently an extra long tracheotomy tube was introduced and seemed for the time being to satisfy the necessary requirements.

The patient unfortunately died three days subsequently, the death being due apparently to collapse of the lungs. The post-mortem examination was carried out by Dr. Nicholls, a report of which follows, and shows the site of the disease to be just where seen when the patient was living, and the want of adduction and abduction, especially of the right vocal cord, is proved by the post-mortem examination to be due to pressure along the course of the recurrent laryngeal nerve by an inflammatory condition of the enlarged lymphatic glands.

The points of interest in this case lie: 1st. In the slight progress which the laryngeal condition had made during a period of six months. 2ndly. The explanation of the deficient movement of the right vocal cord

through pressure upon the recurrent laryngeal nerve by inflammatory products.

The autopsy was performed by Dr. A. G. Nicholls, who makes the following report:—

The body was that of a large-framed man very much cyanosed. In the neck, in the medium line, was the wound of a recent low tracheotomy operation. The left vocal cord was seen to be bulged inwards and upwards, the left fossa being obliterated. Any passage of air through the glottis was impossible. The epithelioma over the left true vocal cord was intact but at the left processus vocalis was a small round ulcer through which a piece of necrosed bone protruded. A probe could be passed through the opening forward along the cord for a distance of 1 c.m. There was no evidence that the growth had extended outside the laryngeal chamber. Five c.m. below the true cords was the tracheotomy opening which was 2.5 by 3 c.m. in extent with ragged edges. It was surrounded by considerable pseudo-membrane and the trachea was intensely inflamed. There was also well-marked bronchitis. Along the course of the left recurrent laryngeal nerve was a small chain of enlarged glands.

Microscopically the growth proved to be a soft carcinoma of glandular type, apparently starting from the deep mucous glands. The lungs were almost completely collapsed; in the liver were four or five secondary carcinoma nodules, and the heart showed moderate fatty degeneration.

CEDEMA OF THE GLOTTIS DURING ANÆSTHESIA*

BY

F. R. ENGLAND, M.D.,

Physician to the Western Hospital, Montreal.

A. B. male, aged 21 years was admitted into the Western Hospital, March 3rd, complaining of a greatly swollen and painful neck. Ten days before admission he consulted a dentist who extracted a tooth (left upper molar). On the following day a painful swelling appeared beneath the angle of the jaw on the left side, which continued to spread until he came to the Hospital. I saw him soon after he was admitted and found him very ill: temp. 103° F: pulse rapid and feeble; general appearance bad.

He had not been able to take nourishment in any quantity for over a week. I found that the swelling of the neck, which extended down to the sternum, was greatest beneath the angle of the jaw on the right side; the skin over this region was of a dusky reddish color, the tissues brawny, indurated, and somewhat œdematous, but no distinct fluctuation could be made out. The jaws could not be separated to any extent and there was great difficulty in swallowing; the voice was slightly altered suggesting some pressure upon the glottis. The case, in short, was one of severe cellulitis of the neck with profound toxæmia.

I decided to incise at once and, if possible, locate and evacuate any collection of pus which might be present. Realizing the danger of rupture of a deep seated abscess into the pharynx or larynx, the anæsthetist was instructed to be most careful and to avoid complete narcosis. While the neck was being cleansed my attention was called to the patient's condition. He had suddenly become cyanosed and a quantity of foetid pus was flowing out of his mouth. His head was immediately lowered, a mouth gag introduced and an attempt made to clear the pharynx. Artificial respiration was tried without effect. As the case was becoming desperate tracheotomy was rapidly performed, followed by further artificial respiration, but all to no purpose. It was remarkable that not the slightest effort to breathe was made by the patient, though the tracheotomy tube and the trachea were both quite clear. The profound toxic condition and consequent lowered vitality, may, I think, offer the best explanation for the rapid and complete failure of the respiration and circulation.

This unfortunate case draws our attention: Firstly, to the importance

* Read before the Montreal Medico-Chirurgical Society, March 20, 1899.

of *early* operation in deep seated inflammation or abscess of the neck, on account of the liability of pus burrowing in the deep tissues and possibly rupturing internally. Secondly, to the danger involved in the administration of a general anæsthetic when operation has been too long delayed, for in a state of consciousness the patient would be able in case of rupture, to assist in emptying his pharynx and thus probably avoid suffocation.

Digest.

By J. C. WEBSTER, M.D.

Physiological and Pathological Relationships between the Female Sexual Apparatus and Other Organs of the Body.

H. W. FREUND. "Die Beziehungen der weiblichen Geschlechtsorgane in ihren physiologischen und pathologischen veränderungen zur anderen Organe." *Ergebnisse der Allgemeiner Pathologie, etc.*, Lubarsch and Ostertag, 1898.

C. THE BLOOD-VESSELS.

Arteries. (1) Physiological. The importance of a normal development of the arterial system, especially of the aorta, to the genital organs has been pointed out in dealing with the subject of chlorosis. The changes which take place in pregnancy in the arteries of the uterus and neighbouring structures need no special mention. The enlargement which occurs is associated with the well-known 'souffle' in the branches of the uterine and ovarian arteries, with the easy palpation of the *azygos vaginæ* artery, and with the increased hyperæmia of the genitals. A souffle is sometimes heard in connection with other enlarged arteries, e. g. the epigastric. The increased arterial tension of pregnancy disappears in the puerperium.

(2) Pathological. The aplasia sometimes met with in the large arteries, described by Virchow, has been referred to. Fatty degeneration of the intima of the imperfectly developed aorta occurs not infrequently. Virchow describes the change as leading to yellow patches and abrasions of the superficial layers without signs of sclerosis. The process develops often just after the onset of puberty but it is more apt to occur in pregnancy, probably in association with the general tendency to fatty metamorphosis in the body. The media more rarely undergoes fatty changes but these are usually only microscopically recognisable. This condition is more serious than the former, for rupture of the affected vessels especially of the aorta under increased vascular tension may occur. Rupture may lead to dissecting aneurism as described by Virchow. This serious fatality has been noted by P. Müller in pregnancy, labour, and the puerperium. Virchow regards these fatty changes as likely to be followed by other changes, e. g., sclerosis and calcareous deposition, which may be found at puberty, in pregnancy, and in connection with myoma uteri.

Leisse and Curbello have published interesting cases of the latter

disease with cardiac hypertrophy and atheromatous arteries. Virchow also noted the latter condition in his work on fat embolism and eclampsia and describes the case of a young puerperal woman in which the brain arteries were very atheromatous. These changes, fatty and otherwise, can also be found in cases in which there is no congenital aplasia.

The development of cirroid aneurism has also been observed in relation to genital conditions. The growth of telangiectatic tumours has been noted in pregnancy. Large and small aneurisms have been described, e. g., those in the ophthalmic arteries. Virchow was the first to draw attention to the special relationship between the changes in these vessels and the puerperal state; embolism occurring in the eye vessels next in frequency to those of the kidneys and spleen.

Veins. Venous enlargement is well recognized in pregnancy, the formation of varicose veins in the external genitals, pelvis, and lower extremities, being fairly common. This condition results from the increased difficulty which the pelvic circulation encounters in the pregnant state, owing to the growth of the uterus, the stretching of the abdominal walls, and the increase of intra-abdominal pressure. The pressure of the uterus on the pelvic veins has been often described as a factor, but it is not to be considered. In chlorotic women, both pregnant and non pregnant, the condition is common; as Morgagni has stated, in such cases where the arteries are narrowed, the veins would naturally be dilated.

The dilated and tortuous veins may form swellings of considerable size, which may project as tumours; extravasations of blood may take place, large and small, under the skin, in the vulva and vaginal walls, in the broad ligaments, etc. Extreme and dangerous loss of blood may take place in marked cases, especially under the influence of hard work, traumatism, or constipation.

Thrombosis may occur in varicose veins and is of special importance in relation to the puerperium. It may also be found in pregnancy. Cases have been described in which the process extended from the lower extremities through the large veins to the heart and pulmonary arteries, though not necessarily leading to complete obliteration of their lumen. The relation of thrombosis to pulmonary embolism has been already referred to.

Inflammation of vein walls may also be found and is due to septic infection. Whatever veins may be infected in the pelvis, the ovarian vein is the most important one by which distribution may occur in the body. Bearing this in mind, W. A. Freund has resected this vessel in cases of puerperal infection. Sometimes infective material gets into a vein by the bursting through its walls of a periphlebitic abscess. In puerperal ulcerative endocarditis, phlebitis and purulent thrombosis is fairly frequent.

Inflammation in the femoral veins is common in the puerperium and

usually is followed by healing. In the condition of phlegmasia alba dolens, besides phlebitis and interference with the venous circulation, there is also an infective process in the lymphatics.

Varicose veins are also found less marked than in pregnancy as a rule, in connection with tumours of the genitalia which affect the circulation; they are more frequent with myoma uteri than with ovarian tumours. They are less frequent with displacement of the uterus and in inflammatory conditions producing adhesions. Sometimes the veins are so dilated with fibroids as to render operative measures very dangerous. Embolism may be caused also by manipulations and surgical procedures. In various pelvic troubles hæmorrhoids are common. In the condition of parametritis atrophicans, W. A. Freund has pointed out the dilatation of veins which occurs sometimes with thrombosis as a result of the compression of parts of the vessels by sclerosing connective tissue.

Finally must be mentioned, the general venous congestion which occurs at the onset of puberty, at the menstrual period, and at the menopause; it generally leads to a feeling of pressure and fulness in the pelvis.

Lymphatics. The uterine lymphatics and those in its ligaments undergo enlargement during pregnancy; in some cases they may reach the size of a quill or even larger. It is doubtful if these vessels play the important rôle in the distribution of infection to the rest of the body in puerperal sepsis which has by many been attributed to them. For, as Virchow has shown, infective processes tend to cause thrombosis in the lymphatics affected, thus interfering with the circulation of the lymph stream. Yet, in some cases undoubtedly, the lymphatics may act as the rapid distributors of infective matter. When the lymphatics are infected along with femoral venous thrombosis, only in a small percentage of cases are those of the leg affected. More commonly only those of the upper part of the thigh and the external genitals of the affected side are involved. On puncturing the skin, in these conditions of phlegmasia alba, lymph exudes.

In some cases of fibroids of the uterus, especially when involving the broad ligaments, there is marked lymphatic enlargement in the uterus, tumour, and surrounding structures. Sometimes this may be so marked in the tumour as to form cystic conditions. Also along the sides of the uterus, masses of distended lymphatics may form swellings of considerable size; these are formed, probably, from some obstruction to the lymphatic circulation.

Matlakowski has described a very rare case of *lymphangioma cavernosum uteri*. It was in the posterior cervical wall and reached to the os externum; from time to time it decreased in size owing to the escape of fluid from it into the vagina but its removal was only accomplished by

amputation of the cervix. In connection with ovarian tumours lymphatic enlargement is rarely noticed.

As to the changes in the lymphatic glands during menstruation, pregnancy, and the puerperium, little is known. The alterations in syphilis, gonorrhœa and other diseases are well recognized. Their relation to carcinoma requires to be worked out. Müller found among 77 cases of primary carcinoma (65 uterine, 12 ovarian), that in 38 only were there secondary changes in glands; in 16 of these the pelvic glands were widely affected. Wagner states that in cervical carcinoma about 50 per cent. of cases show malignant growths in the lymphatics. Dembo in 16 cases of ovarian malignant disease found the mesenteric glands affected only once, (these observations were not, however, based on post mortem examination). Olshausen has pointed out that many malignant ovarian tumours especially sarcoma remain localized for a long time without there being any secondary growths. Petit and Froisier have described the rare case of carcinomatous infection of supraclavicular glands in connection with primary disease of the uterus no other glands being affected; the disease was probably conveyed by means of the thoracic duct.

The Relationships Between Changes in the Female Genital Organs and Body Metabolism.

(1) *Physiological.* All phenomena in the sexual life of woman are to be related to the specific causal influence of the germinative glands (*Keimdruse*). On the supposition that the ovaries secrete some peculiar material which is poured into the blood, it is thought that its influence tells first on the blood, then on tissue formation and metabolism, changes being indicated by alterations in nutrition and in nerve activity. Very marked are the processes induced in the genital organs themselves the great feature being periodicity compared by Goodman and others to wave-movements.

The woman's life may be divided into two great periods, the former of which, marked by menstrual phenomena, is associated with activity in metabolism, the latter, marked by the absence of menstruation, associated with diminished metabolism. In the former period there are a long series of changes due to succeeding menstruations and pregnancies. Many studies have been made for the purpose of registering the bodily changes. Thus, Mrs. Jacobi has found that the rise in temperature in the week preceding menstruation amounts to .10 to .80°F. and that the fall during the period is from .07° to .11°F. Reinl has studied a number of healthy women as well as those with diseased pelvic conditions and finds similar alterations in temperature the lowest degree being registered on the last two days of the period. The apex of the wave is, it is evident, the premenstrual time, not the menstrual period. Yet, in various disturbances

of menstruation the period itself may form the apex, showing elevation of temperature. The act of normal labour influences temperature but little and this notwithstanding the marked nervous influences which are present. Only Winckel states that the temperature is elevated. Bonnal found that the rise was unimportant but varied according to the age of the woman and the duration and painfulness of the labour. In first labours and in twin labours it is no higher than in others. Winckel found the temperature higher in pregnancy by .2 to .3°C. than in the non-pregnant state. Gruher noted it in 96 cases and found the average 37.46°C. in the morning, and 37.31° to 37.32°C. in the evening. In 57 of these cases there were normal deliveries and no rise of temperature occurred but rather a slight fall in the puerperium though immediately after labour there was usually a slight elevation. He noted that well marked labour pains caused a rise, as did difficult births. He also observed abnormal elevation in pregnancy, labour, and the puerperium, with no apparent explanation ; (most likely these were due to some infective process).

It is then evident that the phenomena associated with pregnancy and labour may be compared with those of menstruation. The active formative metabolic processes are most marked during pregnancy, the temperature being elevated. It is the 'wave-crest'. Following labour the temperature falls, reaching its lowest in the early puerperium. The only important difference is the rise which occurs at the end of labour. Baumfelder states that the post partum rise may last for twelve hours, that in the next twenty-four hours it falls, then again rises reaching its maximum on the fourth day, remains fairly constant until the sixth day, falls in the evening of this day and rises again during the seventh and eighth days. On the ninth day there is either a rise or a return to normal.

As regards the pulse, various studies have been made. Baumfelder found its rate highest on the first day of the puerperium, more rarely on the third day; there was usually a return to normal on the fifth, an increase on the sixth and a marked fall on the seventh, afterwards the normal state being reached. The pulse is, of course, affected by many conditions (as is the temperature), e. g., changes in the breasts, febrile states, indigestion, clots in the uterus, nervous conditions, etc. Winckel describes an increased pulse-rate during labour, but no doubt pain, fear, and nervousness, account largely for this.

Changes in the blood pressure have also been studied. Von Ott had shown that it rises before and sinks during menstruation. In the puerperium also there is a marked fall.

Respiration has also been studied but no satisfactory conclusions have been arrived at. In determining the frequency of respirations in preg-

nancy, labour, and other periods, various factors must be considered, e. g., age, position, etc. As far as is well-known it appears that before labour respiration is accelerated and afterwards diminished. During birth a very evident increase takes place associated with nervousness and the straining process. The breathing of advanced pregnancy is mainly thoracic, rarely abdomino-thoracic. In the puerperium the diaphragm again comes into play. The changes in the capacity and movements of the chest in pregnancy have been the subject of much work, Gerhard's observation having long been known, viz., that there is really no diminution in the size of the thoracic cavity during pregnancy, the base being somewhat widened and the diaphragm but little elevated. Dohrn has shown that the basal increase is more marked in breadth than in depth. Kehrer states that in the first pregnancy the basal thoracic measurement increases by 12.2 per cent.; transverse diameter by 9.7 per cent. He also finds that the circumference from the highest point reached in pregnancy to the third day of the puerperium diminishes in primiparæ by 9.5 per cent., in multiparæ, by 8.8 per cent.; the transverse diameter in primiparæ by 9.6 per cent., in multiparæ by 6.7 per cent. In the puerperium the transverse diameter narrows and the antero-posterior widens. Dohrn has also done most satisfactory work in estimating the lung-capacity. In 100 cases he found that on the twelfth and fourteenth days of the puerperium it was greater in 60 per cent., than in pregnancy; in 14 per cent. it was unchanged, and in 26 per cent. diminished. The explanation of these differences is not very evident, age or the number of labours seeming to have no influence.

The result of metabolic changes in pregnancy is most evident from the change in body weight. Gassner has made a special study of this subject in 320 women. He states that during the last three months of pregnancy a marked increase occurs which cannot be entirely attributed to the growth of the ovum. It may be as much as a thirteenth of the whole weight of the body. Winckel in estimating the increase in weight during these months as 1777 grams, states that 1000 grams belongs to the ovum, 150 grams to the growing sexual organs, and 620 grams to the rest of the body. The loss in weight following labour is almost one-ninth the weight of the pregnant woman; this includes not only foetus and placenta and membranes, but blood, sweat, lochia, etc. Considerable variations are found in different cases due to different factors, e. g., primiparity or multiparity suckling or non-suckling, etc. Kleinwächter states that by an abundant and nutritious dietary the loss of weight in the puerperium is rendered less marked. Klemmer denies this.

There seems indeed to be a diminution in the metabolic process in the early puerperium. According to Grammatikati the excretion of nitrogenous elements bears a marked relation to milk secretion; in the

first day or two of the puerperium its excretion is less than on the third or fourth day, when the milk secretion begins. When the child is removed from the breast he finds that the urea excretion diminishes. In 40 analyses to determine the excretion of phosphates in the urine, he found that there was a marked increase on the first day, a diminution on the second, then increase on the third and fourth days as the milk secretion became marked, then a diminution until the sixth day. He got similar results with the sulphur compounds. The quantity of urine passed is also an indication of the variations in metabolism. The common text-book statement that it is increased in pregnancy must only be applied to the conditions of advanced gestation. In the puerperium there are many factors which can cause other variations, e. g., perspiration, lochial conditions, quantities of fluids drunk, etc.; yet it seems established that immediately after labour there is a diminution in the quantity until the fourth day when the minimum is reached. Kehrer estimated that the average quantity during the first days is 21 per cent below that passed during advanced pregnancy. The specific gravity of the urine in pregnancy is lessened. In the puerperium, Kleinwächter states that it is 1015-1016.

Jacobi, in studying metabolism in connection with menstruation, found that the urea excreted in the premenstrual period is increased. It has also been shown that it diminishes during the menstrual period.

A few words remain to be said in regard to the urine. It is very often stated now-a-days that the appearance of albumin in the urine in small or even in considerable quantities during the course of pregnancy may be regarded as physiological. Freund protests against this view for this condition is believed by him to be due to disturbance in the cortical portion of the kidney. It is found in at least 2 per cent. of all pregnancy cases.

It is otherwise with the appearance of sugar in the urine in pregnancy. Blot, Bernard, and Kerstein regard this as physiological and due to a change in a portion of the milk reabsorbed as it is formed in the breasts. This explanation is opposed by several writers. It is not a very constant or frequent phenomenon. In the puerperium, on the other hand, glucosuria is very common. It is not grape-sugar as Hoffmeister and Kaltenbach have described but milk-sugar and it generally appears from the third day. The quantity is greater the more imperfectly the breasts are emptied.

Acetone in small quantities has been found by Winckel in the normal puerperium. Butyric acid was found by Lehmann in a case where there was no nursing.

Peptonuria occurs after the second or third day of the puerperium but is never found before. Truzzi stated that it is most frequent from

the fourth to the fifth day. It is rarely found after the tenth day. Fischel believes that the peptones are derived from the uterine musculature altered by the contractions of labour. In a case of Porro's operation he found that there was no peptonuria in the puerperium.

Küstner has reported a case of ruptured ovarian cyst in which peptones were in the urine. They disappeared after removal of the tumour.

(2) *Pathological.* Women show a tendency to put on fat at two special periods viz., after childbirth and at the climacteric. Pregnancy is evidently favourable to fat development, the chief cause being the deficiency of red-blood corpuscles leading to imperfect oxidation. Fat-development is often noted in chlorotics. Bunsen records a case in which such enormous development of fat occurred in pregnancy as to interfere markedly with the woman's movements. The obesity of the menopause is related to the alteration in sexual functions and in the body metabolism therewith associated. Landois makes special reference to the tendency to increase of fat in eunuchs.

Fat-development exercises an undoubted influence on menstruation. Kisch found disturbances in 82 out of 87 cases; in 15 cessation of menses, in 47 scanty menstruation, and in 20 menorrhagia. Reduction of the fat is usually followed by improvement. The explanation of the change is not so much that the ovarian function is interfered with by deposition of fat in the organ but that there is a fatty infiltration of the uterine musculature and mucosa. Kisch states that the circulation is thereby altered, catarrhal processes being set up. Thorn has also described an atrophic condition of the uterus. Sterility is probably often explained by this condition. There is another class of cases in which a general plethoric state exists marked by great fulness of vessels (especially noted in gouty people), by menorrhagia and by bleedings from many parts of the body, e. g., nose, bladder, bowels, etc.

Pregnancy may be interrupted as a result of the changes in the uterus and circulation in connection with fat increase. Abortion and especially habitual abortion are not uncommon. Labour is apt to be delayed as a result of weakened contractions of the uterus, due to fatty changes and in some cases to over distension of the vessels between the separate muscle bundles. Deficient milk secretion is often noticed in corpulent nursing women.

As regards the relationship of gout to the female sexual organs very little is known apart from what has been already mentioned. Eisenhart has made a study of this subject and finds that mention has been made only of gout causing menorrhagia and metorrhagia, pruritus vulvæ and inflammation in the internal genitals.

Not much is known of the influence of diabetes. This disease is most apt to occur in women after the menopause. Lecorché states that in

114 cases it occurred 70 times after the change of life, 37 times during menstrual life and twice in non-menstruating girls. Different authors are inclined to regard the various diseased conditions found in the uterus and its appendages as in some way favouring the development of diabetes. Imlach notes a case in which marked diabetes was cured after a double sided pyosalpinx was extirpated. Puerperal glycosuria must be distinguished from true diabetes mellitus, the first being merely due to the resorption of milk-sugar from the breasts. Diabetes rarely follows directly upon pregnancy. They may, however, be associated. Abortion and premature labour are apt to be caused. Sterility is common in diabetes. In some cases atrophy of the genitals is brought about. This has been noted by Israël, Prietsch, Hoffmeier and others. Labour and the puerperal period may be quite normal yet sometimes fatal coma may follow delivery. Gaudard states that in more than half the cases the disease becomes aggravated within a few months of labour, ending usually fatally. Lecorché points out that the intensity and the rapidity of the disease are inversely proportional to age, i. e., most active in those who have not menstruated, less marked in menstruating women, more chronic in women who have passed the climacteric.

The most frequent changes in the sexual organs in diabetes are those found in the external genitals. The following are described, viz., pruritus of the labia or surrounding parts, eczema, erythema, prurigo, furunculosis, phlegmonous vulvitis, and condylomata. It is probable that these develop as the result of infection from scratching of the irritated areas. Various organisms have been found, e. g., *oïdium albicans*, *leptomit*, *micrococcus ureæ*, *bacterium coli commune*, etc. Diabetes is to be regarded as somewhat unfavourable to the carrying out of operative procedures.

Very little is known regarding the relation of diabetes insipidus to changes in the genital apparatus.

(To be continued).

RETROSPECT OF CURRENT LITERATURE.

Medicine.

UNDER THE CHARGE OF JAMES STEWART.

Exophthalmic Goitre.

M. ALLEN STARR. "On the Nature and Treatment of Exophthalmic Goitre." *Med. News*, April 18th, 1896.

BOINET. "Recherches sur le Goitre Exophthalmique." *Revue de Méd.* July, 1898.

ASKANAZY. "Pathologisch-Anatomische Beiträge zur Kenntniss des Morbus Basedowii." *Deut. Arch. Klin. Med.*, L. Bd. LXI,

J. ARTHUR BOOTH. "Results of Partial Thyroidectomy in Eight Cases of Graves' Disease." *Med. Record*, Aug. 13th, 1898.

Möbius in 1896 advanced the view that Graves' disease was due to an increased or morbid secretion in the thyroid gland. Although meeting with much opposition, this theory has steadily gained ground and is now accepted by many of the best investigators. Starr marshalls the arguments in favour of this view in a very clear manner. Starting with the fact that myxœdema is due to atrophy or absence of the thyroid gland, the symptoms of this disease are contrasted with those of exophthalmic goitre. It will be only necessary here to quote a few of the leading symptoms of each disease to show the remarkable antithesis which exists between them.

(1) The eyes, prominent in Graves' disease, are retracted in myxœdema.

(2) In myxœdema the pulse is slow, often in the neighbourhood of 60, and it is small and of high tension. In Graves' disease the pulse is large, rapid, and of low tension.

(3) The skin is dry and thickened in myxœdema and the growth of hair is impaired. The hair becomes dry and brittle and falls out, and the nails are ridged and thickened. In exophthalmic goitre the skin

is soft and moist. The growth of the hair is stimulated, the nails grow rapidly and have a glossly appearance.

(4) In myxœdema the body temperature is low and the patients suffer with a feeling of cold. In Graves' disease there is often fever and the sufferers frequently complain of a sensation of heat and burning.

(5) The mental condition in myxœdema is dull and apathetic, the patients are indifferent to their ordinary interests, and are content to sit by the hour idle, listless, and somnolent. In Graves' disease there is a condition of psychical excitement, the mental processes are unduly active, and insomnia is often a troublesome feature.

Another suggestive line of argument is in the effects of overdoses of thyroid extract, which produces symptoms somewhat similar to Graves' disease. Under such circumstances there is a rise of temperature, increased pulse rate, mental excitement, and rapid emaciation.

Askanazy has recently called attention to a wide-spread fatty change in the muscles in Graves disease, a fact hitherto barely noticed by other observers, but one for which toxic origin would be a satisfactory explanation. In four cases this remarkable change was well marked. To the naked eye the muscles are diminished in volume and pale in colour, the yellow, parallel, fatty streaks being readily discerned. Microscopically there is an interstitial lipomatosis and also fatty changes in the muscle fibres and cells. The latter change does not seem to depend on the former, as it may be well marked at certain parts where the interstitial changes are slight. The muscles striæ are indistinct and there is a proliferation of the nuclei. These changes are seen in the muscles in the thorax, abdomen, pelvis, back, eyes, and tongue, and occurred in one case in the pharynx and upper part of the œsophagus. The diaphragm in all four cases was more affected than the other muscles.

The heart muscle does not show the changes referred to although there is always some departure from the normal, consisting in brown pigmentation or in dilatation and hypertrophy leading to fatty degeneration and interstitial myocarditis.

The origin of the wide-spread muscular affection is regarded by the author as a toxic manifestation, the source of which is presumably the diseased thyroid gland. The presence of the muscular changes should prove of considerable value in the pathological diagnosis of the disease. Hitherto, the absence of any constant post mortem changes has rendered such a task difficult or impossible, as the exophthalmos often disappeared after death, and the other well-known signs of the disease can only be utilised during life.

The changes in the muscles explain in a very satisfactory way many of the clinical features of the disease. The muscular weakness, always present and frequently very pronounced, amounting to paraparesis or

even to paraplegia, the emaciation and tremor, may all be attributed to the anatomical changes in the muscles. That most striking symptom of the disease, exophthalmos, may be attributed to a weakness of the orbital muscles, and also the sign known as that of Möbius and consisting in difficulty in converging the eyes receives a satisfactory explanation. So-called "bulbar symptoms" such as difficulty in swallowing and nasal intonation from weakness of the palate, may again be attributed to a muscular defect. The deficiency of expansion of the chest known as Bryson's sign may likewise be the result of weakness in the respiratory muscles, particularly in the diaphragm, in which lipomatosis was well marked in all Askanazy's cases.

If we admit that the symptoms of exophthalmic goitre result from disease of the thyroid, we are still in the dark as to the origin of the primary thyroid change. Characteristic microscopic changes are present in the diseased gland, which are described by Greenhow (*British Medical Journal* 1893, ii) as consisting in proliferation of the epithelium and the replacement of the colloid of the gland by a more mucinous material. The whole appearance is suggestive of a gland "undergoing evolution for increased function."

Whilst the thyroid theory is the popular one at the present time, there are numerous facts suggesting a relation to the nervous system. No constant anatomical lesions have been found in either the medulla or the sympathetic, and the relationship is suggested rather by clinical facts. It seems well established that the disease has many of the characters of a neurosis. It frequently, but to this there are many exceptions, occurs in members of neurotic families and may occur in more than one member of such a family. The onset of the symptoms can be occasionally traced to a violent emotion, such as grief or fright. Boinet records a series of cases illustrating these features and lays stress on the neuropathic origin of the disease. He also relates cases following specific infectious disorders, such as typhoid and influenza. He regards the disease as primarily one of the nervous system and the thyroid enlargement as secondary. He believes, however, that the rôle played by the thyroid, although secondary, is an important one and is responsible for certain features of the disease. J. Arthur Booth expresses similar views more clearly when he states his belief that Graves' disease is a primary neurosis often aggravated by secondary thyroid intoxication.

The treatment of Graves' disease still remains in a rather unsatisfactory condition. Benefit has been reported from such different surgical procedures that it seems doubtful whether the good effects result from the special operation or from other causes.

Jaboulay divided the cervical sympathetic and obtained satisfactory results in nine cases. This operation is based on an obsolete pathology and it seems most improbable that it can be of any real benefit.

More rational are the operations of partial thyroidectomy or of exothyropexy. The latter procedure consists in drawing a lobe of the thyroid through the skin wound and suturing it there. By this means it is sought to avoid the dangers of thyroid intoxication, the secretion of the gland draining away on the dressings. The operation of thyroidectomy is one not to be lightly undertaken as not a few fatal issues after operation are recorded. In such cases death is attributed to excessive absorption of the thyroid secretion due to the manipulation of the gland during operation. The symptoms of this condition are high fever, a rapid weak pulse, great restlessness and excitement, profuse sweating, and, finally collapse or coma. Patients with Graves' disease stand anaesthetics badly and some cases have proved fatal from ether.

Of the cases of throidectomy collected by Starr, a large proportion were benefited by the operation. There were in 190 operations, 23 deaths, 14 complete cures, 45 improved, 3 not improved, and in the remainder the ultimate result is not reported. In Booth's series of 8 cases, all operated on by the same surgeon, one died, 5 were cured, one improved, and in one no change was noticed. The order of improvement was that usually observed, first the goitre diminishes, then the nervous symptoms disappear, later the pulse rate falls, and last of all exophthalmos passes away. This last series of cases are of great value as they were all under observation for a considerable period and all were personal observations of the writer.

F. G. Finley.

On the Cause of So-Called Phosphorous Necrosis in Match-Workers.

RALPH STOCKMAN, M. D. "On the Cause of So-Called Phosphorous Necrosis in Match-Workers." *The British Medical Journal*, Jan. 9th, 1899.

According to his recent investigations upon necrosis of the jaw in those who work in phosphorous fumes, Dr. Stockman has added another diseased condition to those already recognised as due to the bacillus of tuberculosis. In the pus obtained from six cases of jaw necrosis in match-makers, tubercle bacilli were found in each specimen. The staining was done by the Ziehl-Neelsen method. Inoculation of guinea-pigs failed to infect them, but Dr. Stockman regards the failure as due to death of the bacilli or loss of infective virulence through the use of local antiseptics in the treatment of the cases.

Further proof of the tuberculous nature of the jaw disease may be found in the fact that tuberculosis of the lungs is the cause of the majority of the fatal cases occurring in the necrosis cases, while other forms of tuberculosis are not uncommon. It seems essential that some injury to

the jaw or some disease of a tooth exist before the fumes have any effect. The fumes but predispose to the infection of the jaw by tuberculosis.

Is Petroleum Emulsion of Any Nutritive Value?

ROBERT HUTCHISON, M. D. "Is Petroleum Emulsion of any Nutritive Value?" *The British Medical Journal*, March 25th, 1899.

By a practical test, Dr. Hutchison believes he has answered this question in the negative, thus confirming the suspicions entertained on chemical grounds that this substance is not capable of assimilation in the body.

Two experiments were made. "A widely advertised emulsion of exceedingly pure petroleum" was used. Known quantities were given in both trials. In the first experiment a constant diet was given, while in the second no attempt was made to regulate the diet. The fæces were collected, dried, extracted with ether, and the extract weighed. In Dr. Hutchison's words the results of his observations are here given. "It may reasonably be concluded that petroleum is not absorbed in the human intestine, and I consider therefore that it can in no wise be regarded as a substitute for cod-liver oil."

Acute Hæmorrhagic Ascites.

J. MAGEE FINNY, M. D. "Acute Hæmorrhagic Ascites." *The Dublin Journal of Medical Science*, Jan. 2nd, 1899.

A very rare case is described under this title. The patient was a man aged 42 years whose complaints, on first examination, were of gastric symptoms,—a sense of fulness and hardness in the epigastrium and a feeling of soreness. His abdomen was enlarged and showed signs of ascitic fluid. Posturing of the patient gave a clear note over the right flank while he lay on the left side, but while lying on the right side, dulness was present over the left flank and toward the spleen. Relief could be obtained only by tapping the peritoneal sac, and this needed to be done repeatedly as the fluid collected rapidly. The fluid was of the colour of blood with a slight maroon shade; a specific gravity of 1025, and gave on standing a copious soft blood-stained sediment. The hæmorrhagic character of the fluid, present at the beginning, persisted to the termination of the case. In less than four weeks 51½ pints of fluid were withdrawn.

Dr. Finny was at first inclined to make a diagnosis of cirrhosis of the liver, yet the presence of such a condition was doubtful, as many positive points in such cases were wanting, while such an hypothesis was not sufficient to explain the observations made in physical examination, etc.

Dr. Finny, and those who observed the patient with him, were inclined to the idea of malignant disease involving the peritoneum, either the transverse mesocolon or the omentum.

The patient died, and a post-mortem examination was made under great difficulties. The omentum, lying to the front and left side, formed a thick mass, solid and firm and very vascular, bleeding readily on handling. The liver was regarded as normal in size with smooth surface and edges of natural consistence. The growth in the omentum involved the inferior mesenteric and other veins. It was regarded as sarcomatous in its nature. Dr. Purser stated that the tumour seemed to grow chiefly from the vessel wall.

Dr. Finny's remarks upon this case are very interesting indeed, and by a record of his researches he shows how rare such a condition is.

W. F. Hamilton.

Surgery.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

Intracerebral Injection of Antitoxin in Tetanus.

RAMBAUD. "The treatment of Tetanus by means of Intracerebral Injections of Antitoxin." *New York Medical Journal*, Dec. 17th, 1898.

CHURCH. "Treatment by Trephining and the Intracerebral Injection of Antitetanic Serum." *New York Medical Journal*, Dec. 17th, 1898.

SEMPLE. "The Treatment of Tetanus by the Intracerebral Injection of Antitoxin." *British Medical Journal*, Jan. 7th, 1899.

Roux and Borrel seem to have established as a fact, from their experiments at the Pasteur Institute at Paris, that the toxin of tetanus forms a compound with nerve cells which destroys the nerves involved and which antitetanic serum is powerless to dissolve; the serum only neutralizing the toxin which is free and before it has formed the union with the nerve cells.

According to Marie, the poison reaches the nervous centres by two routes. A portion follows the course of the nerves and is fixed by the cells of the spinal cord, and it is for this reason that in animals the contraction always begins in the region in which the injection has been made, and in man generally in the wounded part. Another portion of the poison enters the blood whence it is extracted by the nervous cells. Thus the cells of the cerebrum can be affected by the poison brought to them through the circulation.

Furthermore, Roux and Borrel found that when the toxin was injected directly into the brain of guinea-pigs the dose required to cause tetanus was much smaller than when a subcutaneous injection was made. *Cerebral tetanus* results from the former owing to the nearly immediate fixation of the tetanus poison, and the symptoms are excitement, intermittent convulsive attacks, motor disturbances, and polyuria. The reason why in man as well as in animals the subcutaneous and intravenous injections so often fail is because the antitoxin remains in the blood while the toxin has already been taken up by the nervous cells. Accordingly, Roux and Borrel treated with intracerebral injections of antitoxin forty-five tetanized guinea-pigs and thirty-seven of them recovered. Seventeen others were treated with subcutaneous injections and only

two of these survived. Seventeen check guinea-pigs not treated with the serum all died. Theory and experimentation agreed. Antitoxin introduced into the brain protects the upper part of the cord when the lower part of the cord is already affected by the poison, but it does not cure the lesions that have already taken place; the contractions existing at the time of intervention persist for some time and Roux and Borrel state that if the medulla is already poisoned, (shown by impaired deglutition and respiratory disturbances), death cannot be prevented.

If the intracerebral injection is made in a neutral area such as the fore part of the frontal lobes, the results of the trauma are minimised. The injury caused by the fine hypodermic needle is trifling, the quantity of serum injected is small, and being introduced slowly, no undue compression is caused. Hæmorrhage from the dura and pia is easily avoided, the button of bone removed being preferably small; healing of bone takes place rapidly and no subsequent adhesions, leading to compression, are likely to occur.

It is considered necessary, notwithstanding the intracerebral injection, to continue to give antitoxin subcutaneously or intravenously for a few days; the toxin in circulation within the blood together with that which continues to be secreted at the site of the injury is thereby neutralized and cannot affect the nervous centres.

Rambaud has collected from French periodicals the reports of nine cases treated by intracerebral injections, of which four recovered and five died. The course of the disease in the fatal cases was very rapid, in three of them death occurred within fifteen hours following the operation.

Dr. E. Forgue, of Montpellier, also reports a successful case. In America three cases have been treated by intracerebral injections, one of which reported by Dr. Church, of Passaic, N. J., recovered perfectly, and Dr. Semple, of Netley, England, also reports a successful case.

Technique of the Operation as practiced by Dr. Semple.

The patient is given an anæsthetic and the hair shaved off over the fore part of the scalp and the skin made antiseptic. An imaginary line is taken over the head from one auditory meatus to the other. Another line is taken from the base of the nose to cross the first line at right angles on the top of the head, and a third line from the outer angle of the orbit to where the first two lines cross each other. The centre of the last line is the seat of operation, and is in front of the motor areas of the brain. Having selected this site, an incision of about $\frac{1}{2}$ or $\frac{3}{4}$ of an inch in length is made down to the bone. A small hole is now drilled through the bone with a Archimedean drill having a movable collar, so as to regulate the depth to which it penetrates. The hole in the bone need only be a little larger than the needle of the syringe which is to be

inserted through it. The syringe has a screw piston and the needle is attached by about three inches of rubber tubing. The needle is about two inches in length and has a rounded point. It is inserted through the hole drilled in the bone straight into the brain substance as deep as it will go, and an assistant holds it perfectly steady while the operator very slowly screws down the piston, so as to allow the antitoxin to soak into the substance of the brain drop by drop and avoid breaking up any brain tissue. It should take at least ten minutes to inject $2\frac{1}{2}$ c. cm. When this amount has been injected the needle is withdrawn, the edges of the scalp wound brought together by two or three stitches, and the wound sealed up with collodion and cotton wool. The same operation is now repeated on the other side.

The object of using a round-pointed needle is to avoid puncturing a vessel. A sharp-pointed needle might possibly transfix an artery and produce hemorrhage, whereas a round-pointed one would glide off a vessel and go past it.

The antitoxin used is double the strength of ordinary antitoxin, and although only 5 c.cm. are given ($2\frac{1}{2}$ c.cm. in each side), it represents the amount of antitoxin present in 10 c.cm. of the original serum. The dried antitoxin from 10 c.cm. of the ordinary antitoxin is put up aseptically in glass tubes and sent out from the Pasteur Institute in Paris, ready to be dissolved. The tube containing the dried antitoxin should be opened without contamination, and then 5 c.cm. of sterile water added to dissolve it. When the antitoxin is in complete solution it is drawn into a sterile syringe of the pattern described (Roux's pattern, 5 c.cm. syringe), and is now ready for use.

In addition to the antitoxin given intracerebrally, the patient receives 29 c.cm. daily for two, three, or four days according to the circumstances. The antitoxin given intracerebrally immunises the higher nerve centres before the toxin has been fixed there. The antitoxin given hypodermically renders the blood antitoxic and the toxin as it becomes absorbed from the source of supply,—wound, bruise, or abrasion or any other source, whatever it may be,—is neutralised as soon as it enters the blood-stream. The advantage of giving the antitoxin hypodermically in addition to intracerebrally is evident when one reflects that the tetanus bacilli may still be cultivating themselves and the toxin still being absorbed.

Empyema of the Thorax in Children.

BOGART. "Contribution to the Surgery of Empyema of the Thorax in Children." *Annals of Surgery*, April, 1899.

After discussing in detail the twenty three cases of empyema in children treated in the Methodist-Episcopal Hospital in Brooklyn during the

ten years ending January 1, 1898., Dr. Bogart arrives at the following conclusions:—

(1) Empyema is more often met with in children who are subject to bronchitis.

(2) Males are more frequently affected than females, and the left side more commonly than the right.

(3) Empyema in children generally follows pneumonia, the interval varying from a few days to a few weeks.

(4) In all cases of delayed or interrupted convalescence from pneumonia in children, empyema should be suspected.

(5) If not previously relieved by operation spontaneous evacuation may, in the majority of cases, be anticipated in from two to three months after the onset of pulmonary symptoms.

(6) Spontaneous evacuation whether external or internal (through a bronchus) rarely results in cure of the disease.

(7) The usual symptoms of empyema in children are fever, cough, dyspnoea, anæmia, emaciation and night-sweats; the usual physical signs, diminished expansion or bulging, or both, of the affected side, displacement of the cardiac impulse, when the empyema is left sided, and flatness with absent, distant, diminished, or bronchial voice and respiratory murmur below the level of the fluid.

(8) Because of its insidious development as well as the diversity of the symptoms and physical signs which characterize its occurrence as a complication or sequel of a great variety of other affections, it is not infrequently overlooked or its manifestations misinterpreted; errors which would generally be avoided by the earlier and more frequent use of the aspirating needle for diagnostic purposes.

(9) By its earlier recognition and the prompt institution of surgical treatment the duration of the disease may be materially curtailed and the death-rate considerably lowered.

(10) As in abscesses in other portions of the body, incision and drainage under appropriate antiseptic or aseptic precautions, in the majority of cases, yield the most satisfactory results.

(11) In ordinary cases resection of a portion of a single rib, preferably the ninth in the posterior axillary line, should precede incision of the pleura.

(12) When the collection of the fluid is large a preliminary aspiration should be done twenty-four or twenty-eight hours before rib resection.

(13) The condition of the patient frequently contraindicates the use of a general anæsthetic.

(14) The drainage tube should be large and not too long, and should not be removed until the cavity has been obliterated by the expansion of the lung and the discharge has ceased.

(15) Primary irrigation, curettage, and multiple rib resection are contraindicated in children, but either or all may contribute to the close or obliteration of a persistent sinus or cavity.

(16) Patients should not be considered cured so long as a sinus remains.

(17) In uncomplicated cases, the greatest danger to be apprehended after operation is the development of pneumonia in the opposite lung.

(18) The temperature in uncomplicated cases is not high before operation and generally falls and remains normal afterwards. A rise in temperature after operation usually indicates imperfect drainage or the onset of pneumonia.

(19) In average cases the drainage tube may generally be removed in from three to four weeks and a cure expected in from one to two months.

(20) In cases in which appropriate surgical treatment follows prompt recognition of the disease, speedy recovery without appreciable deformity, and with but slight modification of the physical signs over the affected area, may be confidently anticipated; while neglected cases not only present grave immediate dangers but frequently result in palpable physical defects.

Old Dislocations of the Shoulder.

DUPLAY. "Des Luxations Anciennes de l'Épaule." *Le Progrès Médical*, 4 Mars, 1899.

Discussions on shoulder dislocations are always interesting, but few lesions give rise more frequently to an incorrect diagnosis resulting disastrously to the patient and to the reputation of the attendant. Although easily recognised after all swelling has passed away and atrophy of the shoulder muscles has taken place, the diagnosis is often difficult when the patient is stout, the muscles large and tumefaction present. The difficulties however can generally be overcome by a careful study of all the symptoms laid down in modern text-books on surgery.

M. Duplay deals especially with old dislocations. How are they to be treated? He would classify those of six weeks standing as old. In recent dislocations the difficulties occasionally experienced in effecting reduction are numerous. The head of the humerus may have traversed an intermuscular space. More frequently, the ligament offers an opposition almost impossible to overcome, or the capsule may be in the way of the return of the head. If the great tuberosity is torn off the difficulties are still greater.

In old dislocations the difficulties arise from changes in the muscles, ligaments, and bones.

Ligaments. The anterior part of the capsule retracts and the pos-

terior part covering the glenoid cavity forms adhesions with it which oppose the replacement of the head. The tuberosity when torn off may lie against the glenoid, become engaged in callus, and thus form an obstruction. Again, a new pseudo-capsule gradually forms. Malgaigne has drawn attention to the formation of fibrous bands adherent sometimes to the vessels; and the result of tearing these vessels by violent manipulation is easily understood.

Muscles. The muscles become displaced and form adhesions in their new situation and the long head of the biceps is especially mentioned as obstructing in this way.

Bones. The glenoid contracts and may form a part of the new articular cavity. The head of the humerus becomes altered in shape and occasionally gives origin to bony overgrowth.

The ideal treatment is to effect reduction, as in recent cases. Unfortunately, this is often impossible. Kocher has frequently succeeded by his method after the lapse of three or four months, although dislocations of eight years old are said to have been reduced by manipulations. Failing reduction by manipulation, M. Duplay recommends incision and reduction after loosening the head of the bone, provided it can be done without too great a division of muscles and adhesions. Otherwise a resection of the head of the bone gives a very good result.

Statistical Study of Epithelioma of the Lip.

FRICHE. *Deut. Zeitsch. für Chir., Dec. 1898.* (Extracted by the Philadelphia Medical Journal.)

This statistical study of epithelioma of the lip is interesting because of the great number of cases upon which the statistics are based. In all, 1338 cases of epithelioma of both the upper and lower lip are included in this observation. The lower lip is involved nine times more frequently than the upper, and, as regards sex, we find the lesion in men twelve times oftener than in women. The greatest number of patients so affected were between the ages of 55 and 65. The chances for an individual to acquire an epithelioma increase gradually from the 25th to the 65th year, and from that time on, the chances gradually diminish.

As to the etiology, occupation seemed to play some part, inasmuch as 75 per cent. of the cases occurred in farmers or breeders of animals. Heredity, however, and the use of tobacco and alcohol seem to be of no etiological importance. The prognosis is seriously affected by extension of the disease to the inferior maxilla, for when this occurs, a radical operation is extremely dangerous and permanent cure can almost be excluded as a possibility. Involvement of the lymphatics, of course, renders the prognosis extremely grave, as does also the extent of the lesion.

Every warty growth, on the lip of a patient advanced in years, which resists rational treatment should be considered suspicious and should be extirpated. The incisions should be made at least 1 cm. from the border or edge of the tumour and if the submental or submaxillary glands are enlarged, they should of course be excised, and that too before the growth of the lip is attacked, in order to avoid infection.

Operations involving an attack on the jaw are always most dangerous and it is questionable whether they should not be considered unjustifiable. Erysipelas has been found to have no favourable influence upon the epithelioma, as it has been known to have upon other malignant growths. The operation mortality is from 6 per cent. to 7 per cent. and recurrences take place in about 32 per cent.

G. E. Armstrong.

Gynaecology.

UNDER THE CHARGE OF WILLIAM GARDNER.

Vaginal Fibromata.

PHILLIPS, JOHN, M. D., F. R. C. P. "On Fibromyomata of the Vagina."
British Medical Journal, February 4th, 1899.

Dr. Phillips gives full reports of two cases of this rare affection which have come under his personal observation and makes some remarks upon the disease in general, giving a critical report of 29 cases which have been placed on record since 1882, the previously recorded cases having been fully analysed by Kleinwächter in that year. The variety containing both fibrous and muscular tissue, i. e., fibromyomata, is the one most commonly met with. The age at which the affection occurs varies, in this series the limits being from 29 to 52, the majority being seen in women between 45 and 50 years of age, although fibromyomata have been seen in a new-born infant. There is no proof of the theory that these tumours were originally attached to the uterus, as is held by some. The size of the tumour varies from that of a lentil to a growth weighing ten pounds, the usual being that of a small walnut. They are always single and in the vast majority of cases situated on the anterior vaginal wall with or without a pedicle.

The tumour may undergo various changes. The mucous membrane covering it may slough, or the tumour itself may calcify or contain a hæmatoma. As one would naturally expect the tumour is liable to seriously interfere with pregnancy, so should be at once removed if at all large, if still growing, or if there is a strong likelihood of pregnancy occurring. If pedunculated, it may be removed after the pedicle has been divided by either an ecraseur or scissors, but its size often renders its expulsion from the vagina very difficult. Where there is no pedicle, one should incise and enucleate the growth, either packing the cavity thus formed, or else bringing its sides together with both deep and superficial sutures.

Juvenile Procidentia Uteri.

DUNCAN, J. D., M. B., C. M., Edin. "Case of Complete Prolapsus Uteri in a Girl of Sixteen." *British Medical Journal, February 18th, 1899.*

Prolapsus uteri in an unmarried girl is very rare and is well illustrated by the following case:—The patient, a nulliparous, unmarried girl, six-

teen years of age, was employed as a domestic servant. She complained of a "bearing down of the fore-body," and said that the condition had been present for about ten months and was gradually becoming worse, incontinence of urine compelling her to leave her situation.

On examining her, no congenital defect of the vulva or perineum could be seen, nor had the girl been subjected to any sudden, heavy strain or any harder work than the average domestic has to do. The whole uterus was outside of the vulva and had invaginated the vagina, carrying part of the posterior wall of the bladder with it. The whole mass could be easily returned. The treatment carried out was ventrofixation, packing the vagina, and rest in bed.

The author discusses rather fully the relative value of ventrofixation, vaginal-fixation, and shortening of the round ligaments, in treating cases of prolapsus uteri, giving the preference to ventrofixation.

Treatment of Urinary Incontinence.

BALDWIN, L. GRANT, M. D. "Complete Incontinence of Urine." *American Gynecol. and Obstet. Journal*, February, 1899.

The cases considered in this paper are those caused by injury to the anterior vaginal wall causing prolapse of the urethra, which is necessarily followed by the neck of the bladder. The author does not agree with those teachers who hold that there is no sphincter urethræ but thinks that such a structure does exist. Skene, in his article on vesical inflammation, speaks of partial incontinence of urine in moderate prolapse of the bladder with dilatation of the upper third of the urethra, the main cause for complaint being the frequent and painful micturition which is caused by any slight exertion; and also that this dilatation is caused by the prolapse of the parts.

The incontinence does not vary with the degree of injury to the vagina or displacement of the bladder, those with the most extreme displacement sometimes having but slight incontinence and *vice versa*.

Case I. Widow for six years, complained of incontinence of urine since the death of her husband. She had been married for thirty-five years and had given birth to four children, the youngest being twenty years of age. Her labour had been normal. Very careful examination showed the urethra to be prolapsed in its upper third. A short and small Emmet's hard rubber pessary was inserted and gave immediate and permanent relief.

Case II. This patient was 57 years of age, had been married for 25 years and was the mother of one child, 24 years old. The labour was easy. She stated that she had suffered from incontinence of urine for ten years and examination of the genitals revealed a similar condition

to that found in case I. It was treated in the same way with the same good result.

Case III. This patient was a Sister of Charity aged thirty. In September 1897, she began to be troubled with partial incontinence of urine, which soon became complete except when reclining. Local examination of the parts revealed a very tight hymen but some prolapse of the upper third of the urethra which had been torn away from its attachments. Various pessaries were inserted without any benefit resulting until a rubber ball, one and three-quarter inches in diameter, was inserted into the vagina, since which time she has had perfect control over her bladder.

Pessaries and Tampons.

WATKINS, J. T., M. D. "Tampons and Pessaries in the Treatment of Displacements of the Uterus." *Amer. Gynæcol. and Obstetr. Jour.*, March, 1899.

When tamponing the vagina is necessary, Dr. Watkins considers that lamb's wool is the best material to use as it is very elastic and soft, not caking when saturated with glycerine or the uterine discharge in the same way as absorbent cotton does. In order to be effective the tampon should be replaced within a few hours of its removal. They are best inserted with the patient in the Sim's or knee-elbow position, as then the uterus is not kept down by the weight of the intestines, and whether or not it is placed in front of or behind the cervix, is a matter of little importance.

The author has nothing to say in favour of any pessaries except those which "rest upon the pelvic floor," all others being either dangerous or useless or both. Each patient should be fitted with a pessary which suits her individual case, and this is often rather a difficult procedure to carry out. The pessary should extend from the posterior fornix to the level of the internal orifice of the urethra and should be broad enough to gently distend the vagina without producing any actual tension of its walls. Cases have been seen where continuous uterine hæmorrhage resulted from interference with the venous circulation produced by a too long pessary.

The best material from which to make a pessary is hard rubber as the soft variety absorbs the discharges, gets foul, and causes irritation and possibly subsequent ulceration of the vaginal mucosa. If the pessary requires to be moulded this is best done by softening it in hot water. The flame of a spirit lamp is sometimes used for this purpose but is injurious as it destroys the polish, leaving a roughened surface which readily corrodes and causes irritation.

"The routine use of pessaries, carelessness in studying the indications

for their use, and negligence in the proper selection and adjustment of the instrument to each individual case, has done much harm and cannot be too severely criticised."

Diagnosis of Early Tubal Pregnancy.

McCANN, J. F., M. D., Edin. "Cases Illustrating Difficulties in the Diagnosis of Early Tubal Pregnancy." *West London Med. Jour.*, Jan. 1899.

After relating three cases illustrating the title of his paper, Dr. McCann says that the diagnosis of tubal pregnancy before the occurrence of hæmorrhage in or around the ovum is usually accidental. Amenorrhœa, and the usual mammary changes seen in ordinary pregnancy, coupled with slightly enlarged uterus and a mass to one or other side of it, point strongly to the existence of an ectopic pregnancy. The character of the pain caused by rupture of the tube is important, it being sudden and sharp in its onset and gradually diminishing until another escape of blood sets it up afresh. An irregular hæmorrhagic discharge from the vagina is an important sign, although here it is seldom severe or continuous.

In differentiating tubal inflammation from tubal gestation, the history of the case will often throw considerable light upon the nature of the mass. In inflammations, there is usually a history of a previous attack of gonorrhœa, or else of chronic ill health or attacks of "inflammation of the bowels." Any elevation of temperature should lead one to expect inflammatory trouble, although now and then the temperature runs up in cases of ectopic pregnancy. Where any membrane is discharged, it should be carefully examined, as it differs in ectopic cases from that passed during an ordinary abortion. In the former, it merely consists of uterine decidua, while in the latter, one would see foetal membranes and chorionic villi.

F. A. L. Lockhart.

Small Cyst Degeneration of the Ovary.

MARTIN und ORTHMANN. "Kleincystische Degeneration der Follikel." In A. Martin's *Die Krankheiten der Eierstöcke*: Leipzig, 1899.

The pathology of the very common condition of small cystic degeneration of the ovary is not definitely established. Is the condition merely a follicular hypertrophy, or is it due to inflammation? Most authorities hold the latter view. Virchow, in his well-known work (*Die Krankheiten Geschwülste*), describes the condition as due to a catarrh of the follicles, and points out the frequency of its occurrence in pregnancy and the puerperium. Ziegler states that the cysts are due to abnormal ripen-

ing of the follicles, their non-disappearance being due to the toughness of the covering of the follicles preventing the latter from bursting. Orth thinks that in some cases the cysts are due to excessive physiological activity, but that in others a pathological process is the cause. Nagel thinks that the condition is not a pathological one, but a number of observers, e. g., Bulius, Steffeck, Stratz, Petitpierre, Popoff, Hölzl, and others, have controverted his view and regard the important causal factor as inflammation.

Two varieties may be noted in the development of the condition, viz, a marked increase in the number of the older or riper follicles, and a rapid development of younger follicles accompanied by degeneration. In connection with the first variety, the question arises as to the number of ripe follicles a normal ovary may contain. This is difficult to answer. The normal size of the ripe follicle is not even definitely known. The position and size of the follicles are important in deciding on these points.

In apparently normal ovaries, the visible follicles are arranged mainly close to the surface, round in shape, and distinct from one another. In the condition of small cyst degeneration, the cysts are distributed irregularly throughout the organ, in parts so closely pressed together as to have, on transverse section, very irregular outlines. The tendency of the follicles to lose their round shape, as Hölzl has especially pointed out, may be noted in very early stages of degeneration. Any cyst which is greater in diameter than the thickness of the ovary, even though it contains an ovum and is lined with epithelium, is to be regarded as pathological. Nagel's view to the contrary is to be regarded as wrong.

Next, as to the cause of the cystic degeneration: does it produce merely an increase in the follicle-contents, or hindrance to their escape, or both of these conditions? Undoubtedly both may be brought about as the result of inflammation. Normally the *liquor folliculi* is formed, on the one hand, by breaking down of the protoplasm of cells of the *membrana granulosa* (Flemming's "degeneration vacuoles"), and on the other, by transudation of fluid from the vessels surrounding the follicle. In interstitial oöphoritis, the condition of the vessels is such as to favour an increased transudation into the follicle as well as an increased destruction of the cells of the lining membrane. Moreover, the inflammatory process tends, at the same time, to thicken the follicle-wall as well as to bring about a sclerosis of the inter-follicular stroma, thus interfering with the natural bursting of the follicles. If, in addition, there be a perioövaritis or adhesion of the ovary to neighbouring structures, the abnormal conditions are much aggravated.

As a rule, ovaries thus affected are larger than normal. In many cases the normal shape of the organ is very much altered. On longitudinal

section, twenty or more cysts may be seen. As Bulius has pointed out, it is common to find a very large one at one or other pole of the organ. In marked cases the ovary is completely filled with cysts of various sizes and shapes, separated from one another by very thin partitions. The fluid varies in appearance. In the early stages it is usually thin and transparent; in the older cysts, it is often of a whitish colour. Often it is blood-stained. It may also be of a brownish or yellowish tinge. On microscopical examination, inflammatory changes in various stages may be made out in the stroma. Congested vessels are seen, around which masses of leucocytes may be noted. These changes are especially marked around the follicles. Small extravasations of blood may also be made out. In advanced conditions, thickening and hyaline degeneration of the vessel-walls are found; when very marked these changes give rise to the appearances known as the *corpora fibrosa*. Increase in the cysts is accompanied by stretching and thinning of the interfollicular stroma; this may go on to such an extent as to obliterate the ordinary signs of the inflammatory process.

In the early stages, the cysts may resemble merely normally ripe follicles lined with epithelium and containing the ovum in its *discus proli-gerus*. Later, there is usually an alteration. Leucocytes may penetrate the *membrana granulosa* and the latter undergoes a granular degeneration for the most part; often fatty degeneration occurs and, in some cases, hyaline changes. Many cells may thus break down and run together. The ovum usually undergoes the same granular degeneration, according to Petitpierre, and becomes destroyed. Complete destruction of the epithelium does not always take place; the cells which remain, however, vary greatly in shape, differing markedly from those of the normal *membrana granulosa*. When the cells have been completely destroyed, their place is often taken by a homogenous membrane lying next the *tunica propria*. Hölzl points out that these changes are associated with the development of the irregular outline of the follicle-wall so characteristic of the process of cystic degeneration.

The Earliest Steps in the Formation of the Placenta.

HUBERT PETERS. "Ueber früheste menschliche Placentation." *Monatsschr. f. Geb., Jan. 1899*.

This is a preliminary paper in which Peters gives some notes regarding a very early pregnant uterus. The ovum in its three diameters measured 1.6, 0.9, and 0.8 mm. It was embedded in the decidua vera except for a small extent next the uterine cavity. This portion was covered with a delicate fibrinous network containing blood corpuscles derived from maternal clot. Peters doubts if ever the decidua does close

over the ovum to form a complete reflexa, and believes that this polar gap may be permanently fibrinous. The epithelium of the uterine mucosa is somewhat flattened over the uterine elevation caused by the embedded ovum. The decidual stroma, also, in this portion shows signs of being stretched and immediately around the ovum has an œdematous appearance. New formation of blood vessels is in progress. The mucosal glands are stretched and pushed in all directions by the growing ovum. In some of them blood is found.

The outermost covering of the ovum consists of a thick layer of epiblast. (ectoblast, trophoblast). In this are large numbers of lacunæ filled with maternal blood, the appearance of the tissues being sponge-like. These lacunæ communicate with maternal capillaries many of which are dilated. Trophoblastic prolongations extend into the substance of the decidua. They may penetrate glands or vessels. The evidence as to the foetal origin of the trophoblast is very clear. In it may be distinguished two parts, viz: an innermost portion, known in later stages as the Langhans layer, and an outer portion, the syncytium. Peters thinks that the latter may probably be caused by some chemical influence of the maternal blood on the outer layer of the earliest trophoblast; blood corpuscles are frequently seen in its substance. The marked development of the epiblastic covering of the ovum probably takes place as the latter becomes embedded in the decidua and no villi are present before this stage. In this specimen may be seen the gradual extension of the foetal mesoblast tissue into the projections of the epiblast which project out towards the decidua; this tissue is of delicate mucoid structure and contains no vessels.

J. C. Webster.

Pathology.

UNDER THE CHARGE OF J. G. ADAMI.

The Elimination of Bacteria from the Animal Organism.

PERNICE and SCAGLIOSI. "Ueber die Ausscheidung der Bakterien aus dem Organismus." *Deutsche med. Woch.*, No. 24, 1892.

SHERRINGTON. "Experiments on the Escape of Bacteria with the Secretions." *Journal of Path. and Bact.*, 1.3., Feb., 1893, p. 258.

FUTTERER. "Wie bald gelangen Bakterien, welche in die Portalvene eingedrungen sind, in den grossen Kreislauf und wann beginnt ihre Ausscheidung durch die Leber und die Nieren?" *Berl. Klin. Woch.*, Jan. 16th, 1899.

The fate of bacteria which gain an entrance into the animal economy and the method of their elimination through the various emunctories of the body, form a very important chapter in the history of bacteriology. Any time within the last 25 years the subject has attracted the attention of many able observers like Watson-Cheyne, Cohnheim, Chiari, Cavazzani, Sherrington, and Wyssokowitsch, etc. And to-day, with the perfection of scientific methods and the wealth of information which has been accumulated about the subject, we are only beginning to realise its vastness and the powerful though delicate methods which the body employs in its battle against invading micro-organisms.

It is the teaching of modern pathology that the life of the animal organism is a prolonged struggle against adverse conditions, in fact, a grand example of the theory of "the survival of the fittest," and that the preservation of life is only made possible by the possession on the part of the organism of an elaborate system of defence, more or less perfect; and on the condition of this protective armour, so to speak, depends the health of the animal.

One of the most notable factors is the reserve power of the tissues which enables them to meet effectively, for a time at least, an extra demand upon their resources. Besides this, the skin, mucous surfaces, lymphatic glands, the lungs, the liver, the kidneys, the intestines, and the blood, play a most important part in the elimination and inhibition of toxic agents, and in the maintenance of health. While we recognise the general principle, however, we as yet are only at the Jordan of our knowledge, viewing from afar the promised land; for we have not yet be-

gun to realize the beautiful perfection with which the vital processes of the body are carried on. While we have numerous experimental investigations upon the fate of the micro-organisms of certain infectious diseases and those injected artificially, the part which the body in its normal state plays in the struggle against bacteria, forms a volume which has yet to be written. The studies of Metchnikoff, Kanthack and Hardy, Cohnheim, Buchner, Pansini, Nuttall,—to mention only a few,—on the subjects of phagocytosis and immunity, have thrown a flood of light upon the question.

Franke and Gscheidlen in 1874, Cohnheim in 1877, and Watson-Cheyne in 1879, were the first to study the effects of the inoculation of animals with bacteria and the fate of the organisms. Cohnheim found that after the injection into the blood of bacterial cultures that he was able to find the bacilli in the urine and consequently drew the conclusion that in the urinary secretion the organism possessed a valuable means of eliminating not only chemical but organised bodies.

Wyssokowitsch was probably the first to investigate the subject systematically and with the help of modern bacteriological methods. He injected pure cultures of various pathogenic and saprophytic bacteria into the venous system, and controlled his work by culture experiments and microscopic study. He was led to the following conclusions:—“That shortly after the injection a great diminution in the number of the bacteria in the blood occurred; that a physiological excretion of bacteria through the kidneys did not exist; that the bacteria did not pass into the lumen of the bowel unless there was a severe lesion of the intestinal mucosa; that the destruction of bacteria in the blood exactly in the terms of Metchnikoff's phagocytic theory could not be accepted; that injected organisms were collected in the liver, spleen, bone-marrow, and kidneys; and that saprophytic bacteria were killed by the action of the organic cells while the pathogenic increased, re-entering the blood stream, thus bringing about the death of the organism.”

It must be remarked, however, that similar experiments on the part of other observers have not always given rise to the same conclusions.

The experiments of Schweizer were mostly done to determine whether or not bacteria could pass through the normal kidney. This observer injected a bacillus, probably the pyocyaneus, into the pelvis of the kidney and also into the left ventricle. In both cases bacteria appeared in the urine after three or four hours. In a third series of animals he removed one kidney and after three days he injected the animal through the aorta. The animal died in two and a-half hours and the bacilli were found in the urine. He concluded that bacteria could pass through the kidney but only after they had overcome a certain resistance, on the part of the organic cells. He assumed further that the bacteria produce fine

changes in the cells, unrecognisable by ordinary methods, which rendered their excretion possible.

Maffucci and Traubusti also arrived at the same conclusion and further emphasized the fact that the eliminated bacteria preserved their virulence and power of growth.

Pernice and Scagliosi carried out very numerous and careful experiments upon experimental animals. They employed the bacillus anthracis, pyocyaneus, subtilis, prodigiosus, and staphylococcus pyogenes. Almost always were the bacteria found in the urine and bile, but were also recovered from the mucosa of the mouth, nose, trachea, stomach, intestine, uterus, and vagina, from the milk, semen, pleural and peritoneal exudates, and from the cerebro-spinal fluid. In one case they noted the communication of the *B. subtilis* from the mother to the foetus. The elimination began in from four to six hours after the injection. The eliminated anthrax bacilli retained their virulence, but the pyocyaneus was attenuated. The kidney epithelium was always affected before the bacteria appeared in the urine. The changes consisted in circulatory disturbances, occasionally glomerulo-nephritis, and degeneration of the secreting epithelium. The presence of the germs in the tubules caused swelling, fatty and hyaline degeneration of the epithelium, later exudation and casts. The contorted tubules were chiefly affected, but the straight tubules as well. Later there was desquamation of cells, collapse of the tubules and hyperplasia of the connective tissue. These authors got the same results with filtered toxins.

Cavazzani by injecting tincture of cantharides or pyrogallic acid into rats produced a degeneration of the kidney epithelium, and found that by injecting the *B. pyocyaneus* he could recover it in the urine in $1\frac{1}{4}$ —2 hours, while in his control animals the urine was still free in $2\frac{1}{2}$ hours.

The elaborate and painstaking work of Sherrington on this subject is of great interest. In his paper he refers to the well-known fact that the secretions of an infected individual sometimes contain the organised virus and gives a careful *résumé* of the work done previously to his own. Sherrington made use of the *B. anthracis*, *B. mallei*, *B. tuberculosis*, *B. cuniculicida*, *B. murisepticus*, Ribbert's bacillus, *B. pyocyaneus*, *St. cholera Asiatica*, *Sp. Finkler-Prior*, *B. pneumoniae* (?), *St. pyogenes aureus*, which he injected subcutaneously or intravenously. He then examined the urine and the bile for bacteria and in one case the aqueous humour. The fluids were examined by means of plate cultures as this method proved to be more delicate than the examination of films or sections microscopically. In some cases the urine was examined spectroscopically for blood.

In 68 observations the presence of the micro-organism injected was detected 21 times; in 8 of these 21 cases blood was present in the urine.

and in one case tuberculosis was found in the kidney. The species appearing in the urine without the urine being sanguineous in every case were *B. mallei*, *B. anthracis*, *B. murisepticus*, *B. pyocyaneus*, and the (?) pneumo-bacillus.

With regard to the possible antiseptic power of bile, Sherrington found that none of the species he employed were injured by eight hours immersion in bile. In 49 experiments the specific bacillus was found in the bile in 18, in 6 of the 18 blood was also present. The species appearing in the bile were, *B. anthracis*, *B. pyocyaneus*, *B. murisepticus*, and the (?) pneumo-bacillus. There seemed to be a greater tendency for these species to pass into the bile than into the urine. In no case did the bacteria recovered from the bile or from the urine appear to have suffered change or injury in the process.

Sherrington concludes that his results do not support the suggestion of Cohnheim that the body in the event of bacterial invasion protects itself by excreting the living germs through the kidneys and through the liver. Further, the evidence is against believing that the bacteria can pass a normal membrane though at the same time it need not be ruptured or pervious to red blood-corpuscles. He thinks that before bacilli can pass the membrane the tissues must first be depressed by the action of soluble toxins. This view is supported by the fact that innocuous species of bacteria did not appear in the secretions.

The article is also rendered still more valuable by an extended bibliography.

In his latest contribution, Fütterer endeavours to discover what resistance the liver offers to the production of a general infection, and how soon after general infection is produced, bacteria are eliminated by the liver and kidneys. He first notes some very important observations which go to prove that bacteria can pass from the intestines into the general circulation. Kocher had recorded three cases of strumitis two with gangrene, associated with acute gastro-enteritis. Sittman, Ferrio and Boscio had also submitted evidence to show that bacteria, particularly *Staph. pyo. albus* and the *B. coli* could pass from an injected intestine into the general circulation and appear in the blood and urine.

Fütterer employed cultures of *B. pyocyaneus* and *B. prodigiosus* which he injected into the portal vein. He first tested the blood to make sure that the circulating blood was sterile. He found that the liver offered no resistance to the passage of the germs which appeared in the blood in less than a minute. Similar experiments with *B. tuberculosis* on an ape, calf, dogs, and rabbit were negative. Fütterer then took a dog and ligatured the left ureter just above the bladder. He then injected *B. prodigiosis* into the left jugular vein and recovered the bacilli

from the urine in three minutes. He thinks that only when great masses of bacteria are injected, thus plugging the vessels of an organ, or when there is some predisposition, do local changes manifest themselves.

Investigation of clinical cases in human beings gives analogous results. For instance, Faulhaber in 53 infectious diseases of various sorts found bacteria, notably the diplococcus lanceolatus, *B. Friedländeri*, *B. typhi*, and streptococci in the kidney by the microscope and in many cases by cultivations. The inflammatory disturbances in the kidney were attributed to the presence of the bacteria while the degeneration of the parenchyma was due to intoxication.

With respect to the bile, Chiari, from an examination of 22 typhoid cases, concluded that it was the rule for the *B. typhi* to appear in the bile.

Bacteria have also in human beings been found in the sweat, the milk, and the conjunctival secretion. The general conclusion must be that in the various infectious diseases the specific bacteria at some time appear in the urinary and other excretions of the body. The interpretation of the phenomena is, however, still a matter of dispute.

We may conclude, I think, that all observers are agreed that when bacteria are injected into the blood they sooner or later appear in the various excretions, being found in the bile a little sooner than in the urine. The period of time varies from two to four hours, the elimination of non-pathogenic germs lasting for about 48 hours, of pathogenic germs continuing until the death of the animal. There is still doubt as to whether bacteria can pass a normal basement membrane. The majority, however, seem to hold that there must be at least a slight lesion of the membrane though it need not be one that can be recognised microscopically. At first, the bacteria pass everywhere by the blood, but sooner or later tend to localise in the liver, spleen, kidneys, and bone-marrow. The contradiction between the different observers as to the time it takes bacteria to appear in the urine seems to be due to their probably using different amounts of the culture fluid. If large numbers of bacteria be injected they plug the capillaries of the kidney, hæmorrhage easily takes place and in that case bacteria might appear in the urine in a few moments. As to the fate of the injected bacteria, the process does not yet seem to have been sufficiently worked out. The part of the leucocytes, for instance, in the process does not appear to have been settled. It is clear, however, from the investigations of Prof. Adami lately, that the parenchymatous cells of the liver and the endothelium of the liver capillaries can take up the bacteria by the species of phagocytic action. It is important that in the case of pathogenic bacteria, while for a time they disappear out of the blood and appear to be inhibited, they multiply and re-enter the blood bringing about a fatal termination. Are we to regard the

excretion of the bacteria as an attempt at elimination on the part of the organism? Tizzoni, Preto, Brunner, Gärtner, Geissler, and many others think so. Neumann and Konjajeff, on the contrary, consider that there must be a local kidney lesion to allow the passage of bacteria into the urine. It is difficult, however, to say whether a lesion, which may be present in the kidney, preceded the elimination of the germs, or is a consequence of their presence. It would seem reasonable to regard the elimination of bacteria as one of nature's means of getting rid of offending substances.

The doctrine that the various secretions of the normal body do not contain germs which was so long disputed and finally accepted by most pathologists must, in the light of recent work, be again examined. Létienne, in examining the bile from 6 experimental animals presumably healthy, found his cultures sterile in only one case. This may have depended upon the nature of his culture media, however, and certainly his result has not been corroborated by others. Prof. Adami's recent work shows that normal livers and bile contain bacteria even when no cultures could be obtained. These were apparently dead. We may well, I think, examine further to see if the excretion and destruction of bacteria is not one of the normal functions of the liver-cells and perhaps of those of several other organs. Because cultures are sterile it does not necessarily follow that no bacteria are present. In fact, the whole subject of the natural means of defense of the animal organism against bacteria must be more fully gone into.

A. G. Nicholls.

Reviews and Notices of Books.

AN HISTORICAL SKETCH OF OUR CANADIAN INSTITUTIONS FOR THE INSANE. T. J. W. BURGESS, M. D. Being the Presidential Address in the Section of the Geological and Biological Sciences of the Royal Society of Canada. pp. 122, for sale by J. Hope & Sons, Ottawa; Copp-Clark Co., Toronto; and Bernard Quaritch, London, Eng.

As President of the Biological Section of the Royal Society of Canada, Dr. Burgess most wisely took up for his Presidential Address a subject connected with his life's work, and the pamphlet before us forms a most valuable contribution to the knowledge of the progress of an important branch of medical science in the Dominion. We shall not here attempt to epitomise the many interesting facts brought out by Dr. Burgess: rather, we would ask all interested in the subject to read this work in which Dr. Burgess has collected all that bears upon the history of our Canadian Asylums in a most interesting and readable manner.

On the whole it has to be confessed that while the present condition of our institutions for the insane is, in the main, excellent, and while we possess a body of alienists second to none in their enthusiasm for their subject and in their readiness to utilise every and all means to alleviate and improve the condition of those under them, "the past history of the treatment afforded to those mentally afflicted from one end to the other of Canada, is one that is not creditable to us as a people, one over which we would willingly draw a veil." Brilliant exceptions there have been—men like Workman in Toronto and De Wolf and Reid in Halifax, but it is painful reading to glance over the early history of the institutions in Ontario and even in British Columbia, and still more painful to study what Dr Burgess has to say with regard to Beauport and Longue Pointe and the appalling obstructions that have in the past been placed in the way of anything like adequate treatment of the mentally afflicted in this Province.

In passing, it is interesting to note how important a part was played by our Montreal Medico-Chirurgical Society in remedying the condition of affairs.

Dr. Burgess simply states facts, but it is clear from his pages that the system employed in this Province is radically wrong. Those incapable of caring for themselves are surely the wards of the State, and the Province has no right to delegate its functions of caring for them to inde-

pendent corporations, still less is it permissible for the Province to farm out the unfortunates to corporations to whom their care is a matter of pecuniary interest. Although the Verdun Asylum is, we are proud to say, a model establishment, and although great improvements have occurred within the last few years in the management at Beauport and Longue Pointe, this Province will not be able to hold up its head until it assumes its right responsibility with regard to this matter of caring for the insane.

Works such as this of Dr. Burgess, drawing public attention to and arousing interest in asylums and asylum work, are of the greatest public value. We cordially recommend careful perusal of the same to all interested in philanthropic work and the material advance of our Dominion.

J. G. A.

A TEXT-BOOK OF PATHOLOGY, by ALFRED STENGEL, M. D., Instructor in Clinical Medicine, University of Pennsylvania; Physician to the Philadelphia Hospital, etc. 8 vo., pp. 848, 372 Illustrations. Philadelphia, W. B. Saunders, 1898.

Dr. Stengel has produced what is, taking all in all, the clearest and best one-volume textbook of Pathology with which we are acquainted. It is impossible to cover the entire ground of special and general pathology within the compass of a single volume of under one thousand pages of legible text, but Dr. Stengel has most nearly achieved the impossible, and he is to be congratulated upon producing a work which fills a distinct gap.

The subject of general pathology is treated very briefly, too briefly in fact to be satisfactory. This will be understood when we state that the etiology of disease is discussed in a chapter of less than 14 pages, in which the discussion on heredity takes up but some 25 lines, while inflammation and regeneration are given less than 17 pages, and immunity again is discussed in less than 5 pages. It is to be admitted, however, that within these narrow limits, what is said is put in a singularly clear manner.

It is more especially in the discussion of the diseases of the various organs and systems and in the special pathological portion, that the real value of the work appears. In reading this we have been surprised to see the amount of material Dr. Stengel has condensed without passing over the important points. The illustrations are on the whole admirable, and the work itself is thoroughly reliable and most highly commendable to the fourth year student wishful to gain a broad grasp on the main features of the special pathology of the various systems.

J. G. A.

A MANUAL OF OTOTOLOGY, by GORHAM BACON, A. B., M. D., Professor of Otology in Cornell University, New York; Aural Surgeon, New York Eye and Ear Infirmary. With an Introductory Chapter by CLARENCE J. BLAKE, M. D., Professor of Otology in Harvard University. With 110 illustrations and a coloured plate. 398 pages. Lea Brothers and Company, Philadelphia and New York.

This is a remarkably complete treatise for its size and a most readable little book. It is, moreover, thoroughly up to date and contains excellent illustrations of such new instruments as are required by the otologist for the surgical treatment of morbid conditions in the nasal and nasopharyngeal cavities with a description of the operative procedures in which they are employed: as, for example, the surgical treatment of adenoids in the vault of the pharynx, which clearly belongs to the domain of otology rather than that of laryngology. The same thing may be said of nasal deformities, such as deviation of the septum causing obstruction to nasal respiration. For the relief of this condition the author recommends the operation devised by Dr. Morris J. Asch a description of which, together with that of the instrument used, he gives very fully. There is also a brief but fairly complete account of the modern operations for the renewal of the drum membrane and ossicles with illustrations of the instruments to be used in these operations.

The chapter on mastoid disease and the intercranial complications of suppurative middle ear affections conveys a fund of thoroughly practical information that can hardly be obtained elsewhere in so convenient a form. Much valuable information is contained also in the chapter on diseases of the labyrinth and on deaf-mutism.

The work only needs to become known to attain a wide and general popularity in the ranks of the medical profession. It is especially adapted for all who wish to obtain a practical knowledge of otology with the least possible expenditure of time.

F. B.

NOTES ON SURGERY FOR NURSES, by JOSEPH BELL, M. D., R. C. S., Edin., Consulting Surgeon to the Royal Infirmary, and to the Royal Edinburgh Hospital for Sick Children, Fifth Edition, thoroughly revised, Edinburgh, Oliver and Boyd; London, Simpkin, Marshall, Hamilton, Kent & Co., Ltd. 1899.

This little book of less than 200 pages gives to nurses who peruse it a good insight into inflammatory processes, suppuration, ulceration, gangrene, pyæmia, and the history of wounds. It also teaches them how to deal in emergencies with fractures and dislocations, burns and scalds, and how to prepare the patient and rooms for an operation. A valuable

chapter is devoted to the nursing of children, and finally, a chapter of thoroughly good advice to those who think they are especially fitted to become trained nurses.

The remarks on the discipline necessary in a training school for nurses, and the relation of probationers to fully trained nurses, are clear and to the point; and are given in a kindly way by a hospital surgeon whose large and long experience entitles him to speak with authority. The fact of this being the fifth edition indicates the value and appreciation of the work.

G. E. A.

Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Stated Meeting, March 20th, 1899.

H. A. LAFLEUR, M.D., VICE-PRESIDENT, IN THE CHAIR.

Multiple Diverticula of the Small Intestine—Adeno-Carcinoma of the Prostate—Primary Contracted Kidney.

Dr. A. G. NICHOLLS showed these pathological specimens.

In the first case the specimen consisted of about three feet of the jejunum in which there were fifty diverticula varying from the size of a pea to that of a walnut. These were situated along the mesenteric attachment of the bowel and consisted of herniæ of the mucous membrane into the serosa without fecal contents. The patient was a female, aged 64, who had had a double inguinal hernia for thirty years and bronchitis for twenty-five.

The cause of the condition was not further made out. There seemed to be very few references in the literature to this condition. It was first mentioned in an article in Baillie's *Anatomy* by Sömmerring. Rokitsansky was the first to point out that the condition was really a hernia of the mucosa into the serosa into the sheath of the mesenteric vessels. Hansemann had recorded a case in which there were 400 diverticula in the large and small intestine: those in the small bowel being real herniæ while those in the large were actual sacular protuberances the walls of which contained thinned muscular fibres.

There was a physiological tendency for the wall of the bowel to give way at the point of exit of the mesenteric vessels. This tendency was marked in stout people and increased with age. A division had to be recognised between true and false diverticula. Outside of the congenital forms they were due to pressure from within or traction.

Dr. Nicholls referred to a case recorded by Powell White in the *Lancet* of Nov. 8, 1898, and to a case of his own in which there were two diverticula apparently the result of pressure on an inflamed bowel wall (MONTREAL MEDICAL JOURNAL, Nov., 1898). A case had also been shown him by Dr. Wyatt Johnston.

The Carcinoma of the Prostate was found in the case of an old gentleman aged seventy-six. The prostate was enlarged to the size of a small

orange and the growth was beginning to appear within the cavity of the bladder. There were secondary growths in the pelvic retroperitoneal tissues, on the ramus of the right pubic bone, and on one of the ribs. There was a history of prostatic trouble for a period of twelve years and the tumour had apparently originated in an adenoma.

The Contracted Kidneys were an example of a somewhat uncommon condition, the "primäre Schrumpfniere" of the German school. The cause was lead. The patient was thirty years old, a painter who had had six attacks of lead colic. He had had symptoms referable to the kidneys, —failing vision, weakness, headache, and œdema of the legs, for one year. On admission the heart was enlarged there was moderate arteriosclerosis with high pulse tension. The urine during twenty-five days showed an amount of albumin ranging from $\frac{1}{2}$ to 2 grammes to the litre, the specific gravity from 1005 to 1010. It contained numerous hyaline and granular casts and varied in amount from 25 to 81 ounces per diem. He developed a pericarditis and had three uræmic convulsions just before death. The kidneys weighed 100 and 95 grammes respectively. The capsule was adherent, the surface was not granular but the cortex was diminished and the organ very firm. Microscopically, the fibrosis was very diffuse and well-developed and there was relatively only very little round-celled infiltration. The glomeruli were atrophied and there was very much periglomerular fibrosis. The vessels were slightly thickened. The tubules were very atrophic and collapsed, only a few showing moderate dilatation, with a few hyaline casts. The condition was very different from the ordinary granular kidney of Bright's Disease.

THE CHAIRMAN asked if it was always the case that the ordinary granular kidney passed through the stage of large white kidney, and if the condition here present was not much the same as the small red kidney of Bright's classification.

Œdema of the Glottis during Anæsthesia.

Dr. F. R. ENGLAND gave the clinical notes of this case and Dr. MACPHAIL described the post-mortem appearances. (See page 346.)

Dominion Registration.

Dr. T. G. RODDICK read a paper on this subject which, together with the discussion upon it, will be found on page 321.

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THE "LODGE DOCTOR" IN RELATION TO MEDICAL ETHICS.

Some apology seems needed for again recurring to the thread bare subject of the "Lodge Doctor," but we are not aware that the view indicated by the above heading has had special attention, and are convinced, from recent events, that it undoubtedly raises a question, the proper solution of which is of interest to every practitioner in Canada.

The wonderful increase, of late years, in the membership of the different lodges and benefit societies, a part of whose system is to have medical services rendered at a certain fixed sum per annum, has brought into sharp relief the relations which should exist between these lodge doctors, in the discharge of their duties as such, on the one hand, and the old family physician on the other. For obvious financial reasons, the lodge doctor is generally a young man, probably just beginning practice, who finds that at the outset of the struggle for existence, it is a very convenient thing to have a certain fixed income per year from his lodge, no matter though he may have to render five dollars worth of service for every dollar he receives. There is, besides, a fair chance that he may eventually become the family physician, and thus make a paying practice for himself. In doing this he is almost sure to come into conflict with the former family physician, and the question is raised, how far will the provisions of the present medical code of ethics solve the conflict between the two men? The code was framed for independent medical men—men not under contract to attend when sent for, regardless of the fact that this family are patients of some brother practitioner; and there is no provision in it, so far as we are aware, which will allow the lodge doctor to see another man's patient without his knowledge or consent. Should the code, then, be amended, and the lodge doctor recognised as such?

But the difficulty is not all on the side of the lodge doctor. He may inform the old family physician that he is attending the head of one of

his families in his capacity as lodge physician. A few days later, a request comes to the family physician to see the patient. What should he do? He knows that the patient has another medical man already in attendance, and that according to the code, he has no right to see the case except in consultation with that attendant. But this is not what is wanted, and the patient cannot realize that in calling in his lodge physician he is no longer free to send for his former medical man. It seems, too, hardly fair to the family physician that he should be compelled to refuse to go and see his former patient—perhaps a friend for many years,—just because the medical code is binding on him and yet does not prohibit his fellow practitioner from undertaking duties which must lead to an infringement of its precepts—moreover, in many small towns almost every head of a family belongs to some lodge or benefit society, and a refusal on the part of the regular medical attendant, to attend under the conditions above cited, would soon leave him without any practice. The reader may reason, as many medical men of good standing do, “Why not go? The lodge physician will be none the poorer, and you have no right to neglect your families because they have entered into a contract with another man for certain services at a fixed rate per annum.” But this is not the question to be answered. The code of medical ethics is not one of expediency, or of fees, but one of honor between medical men; and it will not allow us to treat lodge physicians, who are in every sense our fellow practitioners, as a different species of the genus *Medicus*, toward whom our conduct is to be regulated by another and a lower code. How, then, must we get over the difficulty? Should we amend the code in order to recognize the functions of the lodge physician, and thus render it perfectly legitimate for the family physician to see the case and ignore the lodge doctor? This would be throwing open a dangerous door. If the family physician could then be called in, why not any one else? On the other hand, it would now be practically impossible to insist that lodge work shall not be done at all by regular medical practitioners, which seems to us the only other alternative. While we are firmly of the opinion—and we feel certain that this opinion is shared in by a majority of the lodge physicians themselves—that the doing of lodge or society medical work is degrading both to the medical man and to his profession; still we confess that, as society is now constituted and as the medical profession is yearly becoming more over-crowded, it seems more than likely that the number of physicians will increase. Is it not our duty, then, to meet the position fairly and squarely, hear both sides of the case, and draw up some code which will be equitable both to the man doing society-work and to the man who will not, so that in their professional relations may be relieved of that heart-burning jealousy which is often so evident now? The

scheme may be Utopian, but some solution of the difficulty must be arrived at, or the medical code will ere long fall into desuetude, and our whole profession will fall to the level of some of the so-called learned professions, whose members openly solicit patronage without losing cast among their fellow practitioners. May that day be far distant for us!

INTERNATIONAL COMMISSION FOR THE DECENNIAL
REVISION OF THE BERTILLON NOMENCLATURE
OF DISEASES.

Circular to Provincial Boards of Health, to Local Boards of Health, to Statistical Bureaus, to Medical and Surgical Colleges, to Medical Faculties, to Medical Societies and to members of the Medical Profession, in the Dominion of Canada.

In order to make more easy and exact the comparison of the vital statistics of different countries, Dr. Bertillon presented to the "International Institute of Statistics" in 1893, a scheme for an *international* nomenclature of diseases, which is in a manner a compromise between the English, the German, the Italian, and those of other countries. This nomenclature has been successively adopted by the City of Paris, by Mexico, by the Province of Quebec, by the State of Michigan, by the Province of Ontario, by the State of Maryland, and by the State of Indiana. It is also in use in Uruguay, the Argentine Republic and Costa Rica.

The "Conference of State and Provincial Boards of North America," and the "American Public Health Association" have recommended its adoption in each state of the American Union and of Mexico, and in each of the provinces of Canada. Its adoption has also been recommended to the authorities charged with the preparation of the coming census of the United States of America, of the Republic of Mexico and of Canada. Others have promised to adopt the system, so that speaking generally, it may be said that the adoption of this nomenclature is destined to become practically universal, for the Continent of America at least.

In adopting a nomenclature of diseases, it is necessary, *always keeping in view the desirability of making the fewest changes possible*, to provide for its revision at stated periods, in order to keep it in touch with the progress of medical science; and to this end the American Public Health Association, at its Ottawa meeting (1898), approved of the scheme for revision submitted by Dr. Wilbur, after he had already been assured of the co-operation of the French sanitary authorities. The scheme of revision should be completed ready for presentation to the "International Congress of Hygiene and Demography" which will sit in Paris during the summer of 1900.

The American Public Health Association, in which are represented the United States of America, the Republic of Mexico and the Dominion of

Canada, has nominated the following committees to receive suggestions, and in a word to direct the work in their respective countries.

UNITED STATES OF AMERICA.	{	Dr. SAMUEL W. ABBOTT, Boston, Massachusetts.
		Dr. A. G. YOUNG, Augusta, Maine.
		Dr. CRESSY L. WILBUR, Lansing, Michigan, <i>Secretary</i> .
MEXICO.....	{	Dr. EDUARDO LICEAGA, Mexico.
		Dr. JESUS MONJARAS, San Luis, Potosi.
		Dr. JOSE RAMIREZ, Mexico, <i>Secretary</i> .
CANADA	{	Dr. E. PERSILLIER-LACHAPELLE, Montreal, P.Q.
		Dr. PETER H. BRYCE, Toronto, Ont.
		Dr. ELZÉAR PELLETIER, Montreal, P.Q., <i>Secretary</i> .

In order to carry out its portion of the work, the Committee for Canada forwards with this circular, a copy of the nomenclature (Bertillon), and requests all who have interested themselves in vital statistics to carefully peruse the same, and to thereafter, point out any omissions in it, &c., &c.

As we will have to compile the suggestions received before forwarding them to the committees of the other Countries, we cannot promise to consider communications sent in later than the 1st of June next, and consequently we request that each will address to us his suggestions without delay.

The Canadian Committee,

April 14th 1899.

E. P. LACHAPELLE,

PETER H. BRYCE,

ELZÉAR PELLETIER, *Secretary*,

76 St. Gabriel St., Montreal.

P.S.—It is recommended to correspondents to indicate clearly: (a) the number of the title in the nomenclature, (b) the change proposed, (c) the reason for the change, (d) their name, office and address. The following form, which contains one of the suggestions already made to the Commission, is an illustration of this:

(a) Number of the title, which it is proposed to amend: 130

(b) Change proposed: Transfer Pott's Disease to "22E Tuberculosis of other organs."

(c) Reason for change: Pott's disease is usually tubercular. Other similar tubercular diseases may well be joined with it for general statistical treatment. All tuberculosis should be together under one general title.

Signature: CRESSY L, WILBUR, M.D.

March 16th 1899. Office: Chief of Vital Statistics,
Michigan.

Address: Lansing, Michigan.

Most of the nomenclatures now in use are derived more or less directly from that of William Farr, in which diseases are classed for the most part, *according to their anatomical seat, and not according to their nature*. This is evidently right, since the progress of science constantly modifies the opinions of physicians as to the nature of diseases, and consequently, a statistical nomenclature should be modified with the least possible frequency in order to admit of comparison with those of earlier date. The diseases of each system of organs should be grouped together; for example, the nervous system, the circulatory, the respiratory, the digestive, the genito-urinary, the affections of the skin, and those of the organs of locomotion (bones, joints, muscles). Besides these diseases, the seat of which is known, there are others which involve the whole organism. Formerly these general diseases were separated into several sub-divisions which to-day are out of date. It is better to group these diseases together, placing at the head of the list those which, with much reason, Dr. Farr called "zymotic"; then those which are termed "virulent"; finally, other general diseases and slow poisons. But it would doubtless be a mistake to make these distinctions in a new nomenclature, since we can to-day foresee that they will soon lose the importance which was once attached to them. For example, at the present day, the list of diseases called infectious includes additional diseases which were once classed under other titles. It is better, then, to avoid these classifications which are necessarily only provisional, and are also useless for statistical purposes.

We believe that, in the present state of medical science, we should not attempt to establish a definite grouping of diseases. What significance can be attached to-day to the terms "enthetic, dietetic, diathetic" diseases which Dr. Farr proposed for the adoption of the statistical congress of 1855? They have lost all their meaning, and a statistical system which informs us to-day, for example, how many persons died of diathetic diseases conveys but little meaning. But, if the name of the group or subdivision has lost its meaning, the name of any separate disease still preserves its significance; for example, this group of diseases, the "diathetic" was made up of gout, anæmia, cancer and senile gangrene. These diseases which seem to us to-day so oddly associated, when considered separately still preserve very definitely the meaning which they had in 1855. The history of the past should be our guide for the future. Those disease groups which once seemed most natural have rapidly lost their alleged value. We cannot, then, employ them in medical statistics if we aim at permanent work. On the contrary, the meaning of each disease taken separately changes much more slowly.

Class I.—GENERAL DISEASES. (a)

- | | | | | | | | | | | | | | |
|------------------------------------|---|--------------------|-----------------------------|---------------------------------|------------------------------------|---------------------|-------------------------|--------------|-------------------|--|-----------------------|--|---------------|
| 1. Typhoid fever. | | | | | | | | | | | | | |
| 2. Typhus. | | | | | | | | | | | | | |
| 3. Scurvy. | | | | | | | | | | | | | |
| 4. Smallpox. | | | | | | | | | | | | | |
| 5. Measles. | | | | | | | | | | | | | |
| 6. Scarlet fever. | | | | | | | | | | | | | |
| 7. Whooping cough. | | | | | | | | | | | | | |
| 8. Diphtheria and croup. | | | | | | | | | | | | | |
| 9. Influenza. | | | | | | | | | | | | | |
| 10. Miliary fever. | | | | | | | | | | | | | |
| 11. Asiatic cholera. | | | | | | | | | | | | | |
| 12. Cholera nostras. | | | | | | | | | | | | | |
| 13. Other epidemic diseases. | <table border="0"> <tr> <td>{ A. Yellow fever.</td> </tr> <tr> <td>{ B. Plague.</td> </tr> <tr> <td>{ C. Mumps.</td> </tr> <tr> <td>{ D. Others.</td> </tr> </table> | { A. Yellow fever. | { B. Plague. | { C. Mumps. | { D. Others. | | | | | | | | |
| { A. Yellow fever. | | | | | | | | | | | | | |
| { B. Plague. | | | | | | | | | | | | | |
| { C. Mumps. | | | | | | | | | | | | | |
| { D. Others. | | | | | | | | | | | | | |
| 14. Pyæmia and septicæmia. | | | | | | | | | | | | | |
| 15. Glanders and farcy. | | | | | | | | | | | | | |
| 16. Malignant pustule. | | | | | | | | | | | | | |
| 17. Rabies. | | | | | | | | | | | | | |
| 18. Relapsing fever. | | | | | | | | | | | | | |
| 19. Intermittent fever. | | | | | | | | | | | | | |
| 20. Malarial cachexia. | | | | | | | | | | | | | |
| 21. Pellagra. | | | | | | | | | | | | | |
| | <table border="0"> <tr> <td>22. Tuberculosis.</td> <td>{ A. Of the lungs.</td> </tr> <tr> <td></td> <td>{ B. Of the meninges.</td> </tr> <tr> <td></td> <td>{ C. Of the peritoneum.</td> </tr> <tr> <td></td> <td>{ D. Of the skin.</td> </tr> <tr> <td></td> <td>{ E. Of other organs.</td> </tr> <tr> <td></td> <td>{ F. General.</td> </tr> </table> | 22. Tuberculosis. | { A. Of the lungs. | | { B. Of the meninges. | | { C. Of the peritoneum. | | { D. Of the skin. | | { E. Of other organs. | | { F. General. |
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| | { B. Of the meninges. | | | | | | | | | | | | |
| | { C. Of the peritoneum. | | | | | | | | | | | | |
| | { D. Of the skin. | | | | | | | | | | | | |
| | { E. Of other organs. | | | | | | | | | | | | |
| | { F. General. | | | | | | | | | | | | |
| | 23. Scrofula. | | | | | | | | | | | | |
| | 24. Syphilis. | | | | | | | | | | | | |
| | <table border="0"> <tr> <td>{ A. Of the mouth.</td> </tr> <tr> <td>{ B. Of the stomach, liver.</td> </tr> <tr> <td>{ C. Of the intestines, rectum.</td> </tr> <tr> <td>{ D. Of the female genital organs.</td> </tr> <tr> <td>{ E. Of the breast.</td> </tr> <tr> <td>{ F. Of the skin.</td> </tr> <tr> <td>{ G. Others.</td> </tr> </table> | { A. Of the mouth. | { B. Of the stomach, liver. | { C. Of the intestines, rectum. | { D. Of the female genital organs. | { E. Of the breast. | { F. Of the skin. | { G. Others. | | | | | |
| { A. Of the mouth. | | | | | | | | | | | | | |
| { B. Of the stomach, liver. | | | | | | | | | | | | | |
| { C. Of the intestines, rectum. | | | | | | | | | | | | | |
| { D. Of the female genital organs. | | | | | | | | | | | | | |
| { E. Of the breast. | | | | | | | | | | | | | |
| { F. Of the skin. | | | | | | | | | | | | | |
| { G. Others. | | | | | | | | | | | | | |
| | 25. Cancer. | | | | | | | | | | | | |
| | 26. Rheumatism. | | | | | | | | | | | | |
| | 27. Gout. | | | | | | | | | | | | |
| | 28. Diabetes. | | | | | | | | | | | | |
| | 29. Exophthalmic goitre. | | | | | | | | | | | | |
| | 30. Addison's disease. | | | | | | | | | | | | |
| | 31. Leukæmia. | | | | | | | | | | | | |
| | 32. Anæmia, chlorosis. | | | | | | | | | | | | |
| | 33. Other general diseases. | | | | | | | | | | | | |
| | 34. Alcoholism (acute or chronic). | | | | | | | | | | | | |
| | 35. Lead poisoning. | | | | | | | | | | | | |
| | 36. Other chronic poisonings of occupations. | | | | | | | | | | | | |
| | 37. Other chronic poisonings. | | | | | | | | | | | | |

Class II.—DISEASES OF THE NERVOUS SYSTEM AND OF THE ORGANS OF SENSE. (b)

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|---|---|----------------|-----------------|--------------|
| 38. Encephalitis. | 48. Non-puerperal eclampsia. | | | |
| 39. Simple meningitis. | 49. Convulsions of infants. | | | |
| 40. Progressive locomotor ataxia. | 50. Tetanus. | | | |
| 41. Progressive muscular atrophy. | 51. Chorea. | | | |
| 42. Cerebral hæmorrhage and congestion. | 52. Other diseases of the nervous system. | | | |
| 43. Softening of the brain. | <table border="0"> <tr> <td>{ A. Hysteria.</td> </tr> <tr> <td>{ B. Neuralgia.</td> </tr> <tr> <td>{ C. Others.</td> </tr> </table> | { A. Hysteria. | { B. Neuralgia. | { C. Others. |
| { A. Hysteria. | | | | |
| { B. Neuralgia. | | | | |
| { C. Others. | | | | |
| 44. Paralysis without indicated cause. | | | | |
| 45. General paralysis. | 53. Diseases of the eyes. | | | |
| 46. Other forms of insanity. | 54. Diseases of the ears. | | | |
| 47. Epilepsy. | | | | |

(a) We have not placed puerperal fever with other infectious diseases, since it would be necessary to place puerperal phlebitis, phlegmasia dolens, etc., in the same class, diseases which most likely are also infectious diseases. All these diseases are inseparable from the other puerperal diseases with which they are too often confounded, under the general term "sequelæ of childbirth," it is then important to make for all the diseases of pregnancy and childbirth a special class.

(b) When epidemic cerebro-spinal meningitis prevails, it will be necessary to double title *meningitis*.

We must insist upon maintaining the title *paralysis without known cause*. In fact, paralysis is often stated as a cause of death when it can be only a symptom. But the physician is often unable to decide whether the paralysis is due to apoplexy or to cerebral softening.

The title 'Convulsions' exists in all existing nomenclatures, and it is always well filled because of the difficulty in locating the disease which has caused the convulsions. This title should, therefore, be retained.

Class III.—DISEASES OF THE CIRCULATORY SYSTEM. (c)

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|--|--|
| 55. Pericarditis. | 62. Phlebitis and other diseases of the veins. |
| 56. Endocarditis. | 63. Lymphangitis. |
| 57. Organic diseases of the heart. | 64. Other diseases of the lymphatic system. |
| 58. Angina pectoris. | 65. Hæmorrhage. |
| 59. Diseases of the arteries, atheroma, aneurism, etc. | 66. Other diseases of the circulatory system. |
| 60. Embolism. | |
| 61. Varices, varicose ulcers, hæmorrhoids. | |

Class IV.—DISEASES OF THE RESPIRATORY SYSTEM. (d)

- | | |
|--|---|
| 67. Diseases of the nasal fossæ. | 73. Pleurisy. |
| 68. Diseases of the larynx and thyroid body. | 74. Congestion and apoplexy of lungs. |
| 69. Acute bronchitis. | 75. Gangrene of lungs. |
| 70. Chronic bronchitis. | 76. Asthma and pulmonary emphysema. |
| 71. Broncho-pneumonia. | 77. Other diseases of respiratory system (phthisis excepted). |
| 72. Pneumonia. | |

Class V.—DISEASES OF THE DIGESTIVE SYSTEM. (e)

- | | | | | | | | |
|--|---|--|-------------|---|--------------------------------------|---------------|--|
| 78. Diseases of the mouth and adnexa. | | | | | | | |
| 79. Diseases of the pharynx and œsophagus. | <table border="0"> <tr> <td rowspan="2">{</td> <td>A. Pharynx.</td> <td rowspan="2">{</td> <td>A. Other diseases of the intestines.</td> </tr> <tr> <td>B. Œsophagus.</td> <td>B. Diseases of the anus; fecal fistulas.</td> </tr> </table> | { | A. Pharynx. | { | A. Other diseases of the intestines. | B. Œsophagus. | B. Diseases of the anus; fecal fistulas. |
| { | A. Pharynx. | | { | | A. Other diseases of the intestines. | | |
| | B. Œsophagus. | B. Diseases of the anus; fecal fistulas. | | | | | |
| 80. Ulcer of stomach. | | | | | | | |
| 81. Other diseases of the stomach (cancer excepted). | 88. Acute yellow atrophy of the liver (icterus). | | | | | | |
| 82. Infantile diarrhœa, athrepsia. | 89. Hydatid tumor of the liver. | | | | | | |
| 83. Diarrhœa and enteritis. | 90. Cirrhosis of the liver. | | | | | | |
| 84. Dysentery. | 91. Biliary calculi. | | | | | | |
| 85. Intestinal parasites. | 92. Other diseases of the liver. | | | | | | |
| 86. Hernia, intestinal obstructions. | 93. Inflammatory peritonitis (non-puerperal). | | | | | | |
| | 94. Other diseases of the digestive system. (cancer and tuberculosis excepted).. | | | | | | |
| | 95. Iliac abscess. | | | | | | |

Class VI.—DISEASES OF THE GENITO-URINARY SYSTEM AND ADNEXA. (f)

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|--|---|------------|---------------------------|---|-----------------------------|---------------------------------------|----------------|--|------------|
| 96. Acute nephritis. | 106. Other diseases of the male genital organs. | | | | | | | | |
| 97. Bright's disease. | 107. Abscess of the pelvis. | | | | | | | | |
| 98. Perinephritis and perinephritic abscess. | 108. Periuterine hæmatocele. | | | | | | | | |
| 99. Renal calculus. | 109. Metritis. | | | | | | | | |
| 100. Other diseases of the kidneys and adnexa. | 110. Uterine hæmorrhage (non-puerperal) | | | | | | | | |
| 101. Vesical calculi. | 111. Uterine tumors (non-cancerous). | | | | | | | | |
| 102. Diseases of the bladder. | 112. Other diseases of the uterus. | | | | | | | | |
| | 113. Ovarian cysts and other ovarian tumors. | | | | | | | | |
| 103. Diseases of the urethra. | <table border="0"> <tr> <td rowspan="3">{</td> <td>A. Blennorrhagia (males).</td> <td rowspan="3">{</td> <td>A. Blennorrhagia (females).</td> </tr> <tr> <td>B. Others (stricture, abscess, etc.).</td> <td>B. Leucorrhœa.</td> </tr> <tr> <td></td> <td>C. Others.</td> </tr> </table> | { | A. Blennorrhagia (males). | { | A. Blennorrhagia (females). | B. Others (stricture, abscess, etc.). | B. Leucorrhœa. | | C. Others. |
| { | A. Blennorrhagia (males). | | { | | A. Blennorrhagia (females). | | | | |
| | B. Others (stricture, abscess, etc.). | | | | B. Leucorrhœa. | | | | |
| | | C. Others. | | | | | | | |
| 104. Diseases of the prostate. | 114. Other diseases of the female genital organs. | | | | | | | | |
| 105. Diseases of the testicle and its envelopes. Orchitis. | 115. Non-puerperal diseases of the breast (cancer excepted). | | | | | | | | |

(c) We do not employ the title "syncope." This word often means *sudden death without known cause*, a title which figures in Class XIV.

(d) We unite emphysema with asthma, since a careful examination is often necessary to distinguish these two diseases which, however, are quite dissimilar in their nature.

(e) When epidemic dysentery prevails, it will become necessary to double the title "dysentery."

(f) Following the example of Italy and Switzerland we have made no special title for *uremia*, because it constitutes only a consequence of Bright's disease or of diseases of the bladder.

Class VII.—PUERPERAL CONDITION. (g)

- | | |
|--|---|
| 116. Accidents of pregnancy. | 120. Puerperal metroperitonitis. |
| 116. <i>bis.</i> Normal labor. | 121. Puerperal albuminuria and eclampsia. |
| 117. Puerperal hæmorrhage. | 122. Puerperal phlegmasia alba dolens. |
| 118. Other accidents of labor. | 123. Other puerperal accidents. Sudden death. |
| 119. Puerperal septicæmia. | 124. Puerperal diseases of the breast. |
| <div style="display: inline-block; vertical-align: middle;"> <div style="display: inline-block; vertical-align: middle;"> <div style="display: inline-block; vertical-align: middle;">A. Puerperal
septicæmia.</div> <div style="display: inline-block; vertical-align: middle;">B. Puerperal
phlebitis.</div> </div> </div> | |

Class VIII.—DISEASES OF THE SKIN AND CELLULAR TISSUE. (h)

- | | |
|---|---|
| 125. Erysipelas. | <div style="display: inline-block; vertical-align: middle;"> <div style="display: inline-block; vertical-align: middle;"> <div style="display: inline-block; vertical-align: middle;">A. Soft chancre.</div> <div style="display: inline-block; vertical-align: middle;">B. Tinea favosa.</div> <div style="display: inline-block; vertical-align: middle;">C. Tinea tonsurans,
trichophytosis.</div> <div style="display: inline-block; vertical-align: middle;">D. Alopecia areata.</div> <div style="display: inline-block; vertical-align: middle;">E. Scabies.</div> <div style="display: inline-block; vertical-align: middle;">F. Other diseases of
the skin and
adnexa.</div> </div> </div> |
| 126. Gangrene. | |
| 127. Anthrax, carbuncle. | |
| 128. Phlegmon, acute abscess. | |
| 129. Other diseases of the skin and adnexa (cancer excepted). | |

Class IX.—DISEASES OF THE ORGANS OF LOCOMOTION. (i)

- | | |
|---|--|
| 130. Pott's disease. | <div style="display: inline-block; vertical-align: middle;"> <div style="display: inline-block; vertical-align: middle;">A. Arthritis.
the joints.</div> <div style="display: inline-block; vertical-align: middle;">B. Others.</div> </div> |
| 131. Cold abscess, symptomatic abscess. | |
| 132. Other diseases of bones. | 135. Amputation. |
| 133. White swellings. | 136. Other diseases of organs of locomotion. |

(g) We distinguish : (1) The accidents of pregnancy ; (2) Those of delivery ; (3) Those which follow delivery. Extra-uterine pregnancy is, in our opinion, too rare a phenomenon to deserve a separate heading.

The exact limits of puerperal septicæmia have not yet been traced ; the existing tendency is to attribute to the principle of infection a great number of accidents which were formerly believed to be independent of puerperal fever. This point not being scientifically determined, statisticians should be prudent and create special titles for the more frequent of these accidents. Later, when it shall become known where they belong, it will always be possible to add together the figures which follow each of these titles. We propose, therefore, to introduce special titles for the following diseases : 1. Septicæmia ; 2. Phlebitis ; 3. Metroperitonitis ; 4. Puerperal albuminuria and eclampsia (diseases which perhaps are not identical)* ; 5. Phlegmasia alba dolens ; 6. Other diseases.

It would be unfortunate not to place these titles near together, or to transfer some of them to the infectious diseases. We do not yet know, in fact, what diseases among these are of bacterial origin ; some physicians willingly apply this title to them now, and no one knows just where we shall find them in the future.

Moreover, many diagnoses are practically incomplete. Many women are registered as dead from the "accidents of childbirth," no indication being given whether death was caused by infection.

(h) Erysipelas, anthrax, and also phlegmon are classed to-day as infectious diseases, but since these diseases affect only the skin and its adnexa, there is no advantage in classifying them as general diseases since they are not general diseases. All the nomenclatures take this course so far as anthrax and phlegmon are concerned ; but they are less unanimous regarding erysipelas. Moreover, the figures which represent this last disease are always incomplete, since it is very often nothing but a complication of some other disease.

(i) Among the diseases of the bones, we have given a separate place to Potts disease (as done in the Italian nomenclature). In our opinion it would be a mistake to classify this disease with tuberculosis, since it may happen that Potts' disease be not tuberculous.

We are compelled by the neglect of a few physicians to introduce the title "amputation." Amputation is not a disease and ought not to be considered as a cause of death, since it is on the contrary an operation designed to prevent death. But it often happens that medical men, instead of stating definitely the disease or lesion which has made the amputation necessary, write simply the word "amputation."

Class X.—MALFORMATIONS. (*j*)

137. Malformations.

Class XI.—INFANTILE.

137. *bis.* Newly-born; foundlings, dis- 139. Neglect,
charged from hospital without hav- 140. Other diseases peculiar to infancy.
ing been sick.
138. Congenital debility, icterus and
sclerema.

Class XII.—OLD AGE.

141. Senile debility,

Class XIII.—EXTERNAL VIOLENCE. (*k*)

- | | | | | |
|--|---|----------------------------------|----------------------------------|--------------------|
| 142. Suicide or
attempt
at sui-
cide. | { | A. By poison. | 144. Sprains and dislo- | f A. Sprains. |
| | | B. By asphyxia. | cations. | { B. Dislocations. |
| | | C. By strangulation. | 145. Other accidental injuries. | |
| | | D. By firearms. | 146. Burns. { A. By fire. | |
| | | E. By cutting instru- | { B. By corrosive substances. | |
| | | ments. | 147. Sunstroke and freezing. | |
| | | F. By drowning. | 148. Accidental drowning. | |
| | | G. By precipitation from | 149. Overwork and { A. Overwork. | |
| a height. | inanimation. { B. Inanition. | | | |
| H. By crushing. | 150. Inhalation of noxious gases (suicide | | | |
| I. Others. | excepted). | | | |
| 143. Fractures. | { | 151. Other accidental poisoning. | | |
| | | 152. Other external violence. | | |

Class XIV.—ILL-DEFINED DISEASES. (*l*)

- | | |
|---|---|
| 153. Exhaustion, cachexia. | 157. Sudden death. |
| 154. Fever. { A. <i>Embaras gastrique</i> . | 158. Abdominal tumor. |
| { B. Inflammatory fever. | 159. Other tumors. |
| 155. Dropsy. | 160. "Plate." |
| 156. Asphyxia; cyanosis. | 161. Unknown or not specified diseases. |

(*j*) Since malformations, even though congenital, may cause death at later periods of life they should be placed in a separate class.

(*k*) The different modes of death by violence are many in number; we have selected those which are the most frequent, and have presented titles which are sufficiently comprehensive, so that any one may, without difficulty, classify any unforeseen cases which may occur.

(*l*) It often happens that the physician cannot state definitely the cause of death, and is compelled to give as the cause some symptoms which are common to several different diseases. This frequently happens, for example, in cases of sudden death. It may be apoplexy, it may be the rupture of an aneurism, it may be angina pectoris or possibly some other disease which has caused death. The physician cannot ascertain the cause, and therefore writes upon the certificate the words "sudden death." Statistics would deprive us of important information if these deaths were to be confounded with those from "unknown or unspecified causes." Titles should therefore be given to them.

[CANADIAN REVISION COMMISSION'S NOTE.—In the above pages, only the *long* nomenclature has been reproduced, as it is impossible to revise the two abridged nomenclatures, which are a *résumé* of the long one, without an agreement being previously reached regarding the main nomenclature. In regard to Bertillon's annotation of the nomenclature, it has been possible to reprint only the most important parts.]

DR. J. CLARENCE WEBSTER.

We have to chronicle with mingled feelings of pleasure and regret the early departure from our midst of Dr. J. Clarence Webster, Lecturer in Gynaecology in McGill University. While it is gratifying to know that his ability has led to his appointment as Professor of Obstetrics and Gynaecology in the University of Chicago, his genial presence and his scholarly attainments have, in a few years, attached him very closely to the profession in this city and his fellow teachers at McGill.

Dr. Webster has had a distinguished career. He was educated at Mount Allison University, where he took his degree of B.A. in 1882. He graduated M.B. at Edinburgh University in 1888, receiving the degree of M.D. in 1891. He was subsequently made a Fellow of the Royal College of Physicians, Edinburgh, and a Fellow of the Royal Society, Edinburgh. He has also had a Continental training in Leipzig, where he worked under Sanger, and also in Berlin. In 1889, he became Assistant Lecturer on Obstetrics in the Edinburgh School of Medicine. In 1890 he was appointed First Assistant in the Midwifery Department of the University of Edinburgh, as well as private assistant to Prof. A. R. Simpson.

Dr. Webster has taken a number of research scholarships and is a member of several foreign medical societies. He is the author of a text-book on gynaecology, a monograph on extra-uterine pregnancy, and numerous other medical works. Since 1897 he has been connected with McGill University. It is a pleasure to recognise that one of our number has, by his labours, gained for himself a reputation in both continents, and while we admit sorrowfully that the University of Chicago offers to him in position, emoluments and opportunities, inducements with which we in Montreal cannot vie, we feel a jealous bitterness that we cannot retain so brilliant a colleague, and he will perhaps forgive us if we express the hope that he may find the stress and strain of Chicago so inimical to research and quiet thought, that we may at not too distant a date see him back in our midst. We extend to Dr. Webster our congratulations on his appointment to such an important position, and our best wishes for his success in his new sphere of work.

NOTE.

Owing to an error on the part of the printer in making up the forms for the April number of *THE JOURNAL*, pages 313 and 314 were transposed, also the three first lines on page 313. Readers interested in the editorial on "Glycerinated Vaccine" will therefore read from line 3 on page 313 to page 314; and in the editorial "Prescribing Opticians" read from foot of page 14 to third line of page 313, and from page 313 to 315.

The EDITORS can only express regret if their readers have been inconvenienced through this error on the part of their printers.

CONGRÈS PÉRIODIQUE INTERNATIONALE DE GYNÉCOLOGIE
ET D'OBSTÉTRIQUE.

3e SECTION—AMSTERDAM—AOUT 1899.

Amsterdam, September 1898.

Dear Sir,

We have the honour of soliciting your presence at the 3d Intern. Congress for Gynecology and Obstetrics to take place at Amsterdam from the 8th to the 12th of August 1899 under the patronage of the Minister of the Interior.

The leading questions for discussion will be the following:

1. The surgical treatment of fibro-myoma.
2. The relative value of antiseptis and improved technique for the actual results in Gynecological Surgery.
3. The influence of posture on the form and dimensions of the pelvis.
- 4 The indication for Cæsarean section compared to that for symphyseotomy, craniotomy and premature induction of labour.

We have succeeded in obtaining the valuable concurrence as reporters of Drs. Doyen, Howard Kelly and Schauta who will treat the first question; Drs. Bumm, Richelot and Lawson Tait the second; Drs. Ronnaire, Pinzani and Walcher the third; and Drs. Leopold, Pinard, Pestalozza and Fancourt Barnes the fourth.

We propose sending the reports with their translations in the official languages to all the members, a month before the opening of the Congress. As regards private communications, preference will be given to those bearing upon the above mentioned leading questions. Time will also be allowed sufficient for any demonstrations kindly afforded by the members.

The official languages are: English, French, German and Italian.

We venture to urge our request that you will honour the Congress with your presence and, by communicating your experience, insure scientific results as satisfactory as those obtained by the previous Congresses of Brussels and Geneva.

The Committee :

H. TREUB,
President.
J. VEIT,
Vice-President.
G. C. NIJHOFF,
J. P. BARNOUW,
Treasurer.
M. A. MENDES DE LEON,
Secretary.

NEW BOOKS, ETC., RECEIVED AND NOTED.

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THE MONTREAL MEDICAL JOURNAL.

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No. 6.

Original Communications.

ON THE RECOGNITION OF INCIPIENT TUBERCULOSIS IN MAN.*

BY

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Ever since the abandonment, not so many years ago, of a hopeless prognosis in the majority of tuberculous affections, and the acceptance of the fact, now abundantly demonstrated, that tuberculosis is a disease, which in its incipient stage at least tends under favouring conditions to subside spontaneously or to become arrested in its evolution, the efforts of the profession have been constantly directed towards the improvement and extension of methods of diagnosis, whereby tuberculisation of the human subject might more speedily be detected.

We owe much to the morbid-anatomist and the bacteriologist for this salutary change of opinion. The former, in the dead-house, pointed out the frequency of healed tuberculous processes in the bodies of individuals who had died of other diseases, the latter discovered the specific agent that proved the infective nature of tuberculosis, and in subsequent investigations carried on with the greatest perseverance brought forward a mass of knowledge concerning the chemistry and biology of the bacillus tuberculosis, which has been of the greatest value in the diagnosis, prophylaxis and rational treatment of tuberculous infection in man and the lower animals.

The discovery of the bacillus tuberculosis and of tuberculin are certainly epoch-making in the history of our knowledge of tuberculosis.

With a more hopeful view of tuberculosis is necessarily associated its early recognition, for it can never be too often repeated that the earlier the disease is recognised the greater is the prospect of cure or, at any

* Being a contribution to a discussion on the "Prevention and Cure of Tuberculosis," at the Montreal Medico-Chirurgical Society, 17th April, 1899.

rate, of arrest of the disease. From a broader point of view than that of the individual it is, moreover, important that tuberculous disease be recognised at its very beginning. Every tuberculous person, particularly if suffering from pulmonary tuberculosis, is a source of danger to his neighbour, and it is obvious that it is of advantage to the community that such an individual should, if possible, be cured of his disease as speedily as can be, or, failing this, that such measures be adopted as will protect others from infection. 'Tuberculophobia' is rapidly growing among the public, more rapidly than among the medical profession, who should with the knowledge they possess pay rather more attention to the spread of the disease by infected individuals than they have heretofore done.

The evidences of tuberculous infection may be broadly divided into:—first, presumptive, and secondly, direct. Under the term presumptive evidence are included certain general characteristics which have for a long time been held to point to the possibility, or even probability, that the individuals who possess them are, if not actually tuberculous, at least more liable to become so than such as do not exhibit these peculiarities. Among these may be mentioned hereditary predisposition, certain physical defects, particularly abnormalities in the form of the thorax associated with diminished respiratory capacity, and hypoplasia or imperfect development of the central and peripheral organs of circulation. To these must be added a body weight that is deficient in proportion to the height, a condition upon which insurance men lay considerable stress. In the same general category are included certain social aspects of the individual, such as an insufficient or faulty dietary, bad hygienic environment, addiction to alcoholic or other excesses, and last but not least, what the French very aptly term "*surmenage*"—"overdriving," both physical and mental. In any given case these may individually or collectively afford presumptive evidence of tuberculous infection, but nothing more. Indeed, they are of more value in suggesting prophylactic measures against tuberculosis than in the diagnosis of actual tuberculous disease.

In respect of the diagnosis of incipient tuberculosis more interest attaches to phenomena that have been considered to point to what has been called the "pretuberculous stage" of the disease, i. e., a period in which it is impossible by the most careful physical examination to detect tuberculous disease in any organ, but in which there is obvious deterioration of the general health, associated with some pathological condition which in itself does not bear the stamp of tuberculous origin and might depend on some other cause. The principal pathological conditions that are found in this so-called "pretuberculous stage," are chlorosis, or rather chloro-anæmia, progressive loss of body-weight, slight elevation of the body temperature, disorders of digestion, local-

ised bronchial catarrh, polyuria with or without albuminuria, and undue rapidity of the pulse, particularly in the recumbent posture (cardiac erethism). Are we dealing here merely with various conditions of debility which prepare the ground for the seed of tuberculosis, or are these conditions really induced by the actual presence and multiplication of the bacillus tuberculosis in the tissues? The most recent opinion is that in very many instances the above abnormal conditions are due to the presence in the circulation of toxins elaborated by the bacillus tuberculosis, or, in the case of urinary disturbance, to their elimination by the kidneys. Proof of this will be adduced when we come to discuss the tuberculin test.

It will be impossible for me in the limited time at my disposal to discuss seriatim the direct evidence of tuberculous infection of the various organs. As we are chiefly concerned with pulmonary tuberculosis, which includes the bulk of tuberculous infections, I shall confine myself to the diagnosis of this localisation, referring only incidentally to other localisations as they bear on the question of pulmonary disease.

The means at the disposal of the physician for the early detection of tuberculous lesions in the lungs are:—

- (1) Thorough and methodical physical examination of the lungs.
- (2) Examination of the sputum.
- (3) The tuberculin test.¹

In any given case there may be present one or more of the factors referred to above as constituting presumptive evidence of tuberculous infection, to which due weight must be attached in connection with the direct evidence obtained. Part of the presumptive evidence is to be obtained from the history of the patient, and part from the general examination which should in all cases precede topical physical examination.

(1) *Physical examination of the lungs.*

It might seem a platitude to insist on thorough physical examination, were it not a fact that too often the failure to detect incipient tuberculous disease of the lungs is due to hasty or defective methods of examination. Errors of omission are, I believe, more frequent than errors of commission, and for the former there can hardly be any justification. The thorax should be completely exposed, the patient sitting or standing in a good light, and care should be taken that the position is quite symmetrical, the arms being dropped to the side or lying loosely on the thighs. Inattention to these details is apt to vitiate the results obtained from inspection, mensuration, palpation, percussion, and, to a less de-

¹ Skiagraphy deserves mention, though as yet the results achieved in the detection of tuberculous or other consolidations of the lung are not to be compared with those derived from physical examination.

gree, auscultation. Inspection and palpation seldom afford trustworthy signs of *incipient* tuberculosis. When there is unequal expansion of the apical or infraclavicular areas with increase of fremitus in the area of deficient expansion, it is no longer proper to speak of incipient tuberculosis. The disease is already well advanced in what is commonly called the first stage, and the individual tubercles have coalesced to form more or less consolidation of that portion of the lung. An almost identical statement applies to percussion. To produce even a slight quantitative or qualitative alteration of the percussion note, there must be consolidation, i. e., coalescence of many minute tuberculous foci. There can be no doubt, however, that in experienced hands percussion affords, if not the earliest, at least fairly early evidence of tuberculous infiltration. Much depends on the patient; in thin subjects, young or old, differences are more easily detected than in those who are fat or have well-developed muscles. Particular attention should be paid in percussion to certain regions of the thorax, which overlie those parts of the pulmonary structure most frequently and earliest affected with tubercle. These are the clavicular and subclavicular spaces, (not the extreme apex of the lung), the upper anterior border of the upper lobe, the lingula of the left upper lobe overlying the heart, the supraspinous space behind, the upper interscapular areas (overlying the apex of the lower lobes), and lastly the upper border of the lower lobe behind (corresponding on the surface with the vertebral border of the scapula when the hand is placed on the opposite shoulder with the arm at right-angles to the body). I need hardly mention that corresponding areas should be percussed symmetrically and successively.

It is from auscultation that we obtain the earliest signs of pulmonary tuberculosis in physical examination. Three varieties of alteration of the normal breath sounds have been considered to point with more or less certainty to early tuberculous infiltration; roughness of inspiration with prolonged expiration, enfeeblement of the vesicular murmur, and interrupted, jerky, or as it is sometimes called, cog-wheel respiration. The first two signs are the most reliable. The roughening of inspiration is accompanied by a lowering of the tone, so that inspiration has the same quality as expiration. On the other hand, the expiratory breath-sound, in addition to being prolonged, may be raised in tone up to or above the inspiratory breath-sound. The explanation usually allowed for these changes is that the infiltration of tuberculous material occurs earliest at the point where the terminal bronchiole breaks up into the infundibular and acinous structure of the lung, producing a diminution in the lumen of this portion of the bronchial tree which interferes with normal in- and ex-piration. This explanation seems hardly reasonable when one considers that there is no movement of air beyond the

larger bronchial tubes but merely an exchange of gases. In whatever way produced, these changes in the respiratory sounds do occur very early, and, as the disease progresses, pass insensibly into the broncho-vesicular and, finally, more or less distinctly bronchial breathing. In other instances, enfeeblement of the inspiratory sound, especially the inspiratory sound at the apices, is the earliest change observed. This may be due to tuberculous infiltration of the lobules, to adjacent local emphysema, to pleurisy localised at the apex, or, more rarely, to compression of the bronchus by enlarged glands. Hence it is not so reliable a sound as the roughening of inspiration. Jerky, or cog-wheel, respiration is of value only in connection with other signs, for it is found in other conditions such as hysteria, non-tuberculous affections of the lung, and in nervous persons. It must be noted that normally, especially in women, a slight difference in the auscultatory phenomena may be found between the right and left apices. The breath-sounds at the right apex may be more intense, even a little harsh, expiration a little prolonged and the voice-sounds more distinct than at the left apex. Hence it is chiefly when there is alteration of the respiratory murmur at the left apex that the above noted signs have a real diagnostic value.

The presence of adventitious sounds is the surest indication by physical examination of incipient pulmonary tuberculosis, the crackling *râle* heard over a limited area of the lung being almost pathognomonic of tuberculous infiltration of that region. There may be only a few clicks heard at the end of inspiration, or a shower of crackling sounds may occur with each inspiration, more rarely with expiration. These *râles* have been compared, not inaptly, to the sounds produced by insufflating a dry bladder. They vary much in intensity, volume, tone, and pitch, but their chief characteristic is their persistence in the area over which they have been found. It is important to remember that these sounds may be completely absent during quiet breathing. To produce them a deep inspiration is often necessary. A still better method is to make the patient cough once and then inspire quickly and deeply. They may then be heard either at the end of the cough or during the succeeding inspiratory effort. Too much stress cannot be laid upon this method, which often gives positive evidence of adventitious sounds when other methods have failed.

While the diagnostic value of the crackling *râle* is undoubted, the explanation of its occurrence and the mechanism of its production are still matters of controversy. By some it has been thought to have its origin in the pleural covering of the lungs, by others to be a variety of the crepitant *râle*, due to distension of alveoli adjoining the small areas of tuberculous infiltration,—by still others to be due to the localised bronchial catarrh which accompanies the growth of tubercles in the lung structure.

In the circulatory system the only sign which has any value in the diagnosis of pulmonary tuberculosis is accentuation of the second sound of the heart in the area of the pulmonary semilunar valves. This sign has a real value only when taken in connection with abnormal pulmonary signs indicating tuberculosis and in the absence of any concomitant pulmonary or cardiac lesion that is capable of producing such an alteration.

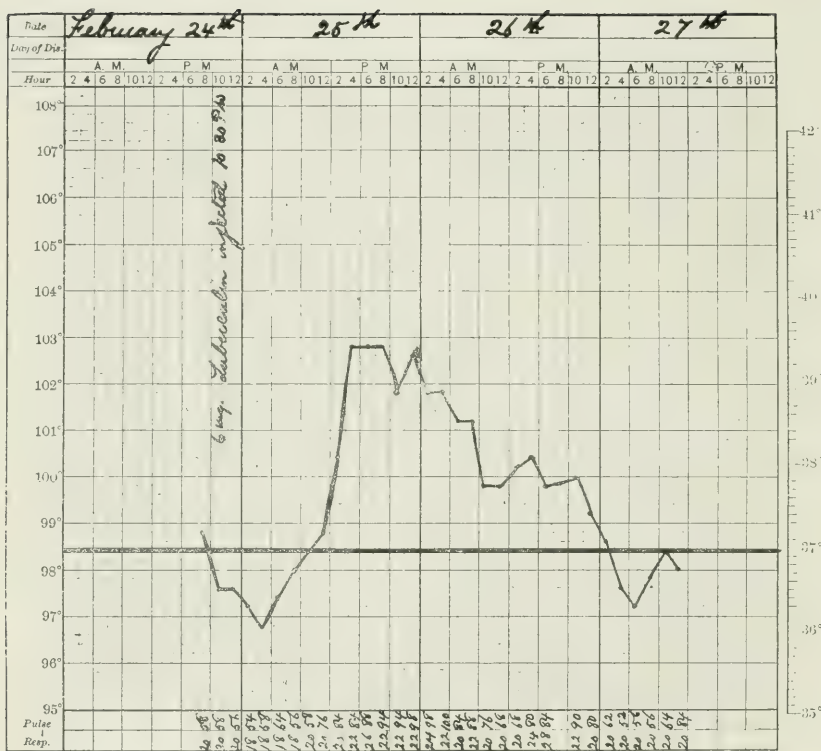
(2) *Examination of the sputa.*

The data obtained by physical examination, however conclusive apparently, should invariably be supplemented by examination of the sputa, if there be any, at the earliest possible opportunity. Patients often say that "the expectoration does not amount to anything, only a little mucus." It may not amount to much in quantity, but bacteriologically it may amount to a great deal. The most innocent-looking mucus, or even a thin fluid which appears to be nothing more than saliva, may fairly teem with tubercle bacilli. The sputum in the earliest period of tuberculous infection of the lungs is usually a homogenous, viscid, greyish, or slightly greenish-grey, mucus, which may or may not contain blood. Even in such mucoid material one may usually find more opaque slightly muco-purulent particles or streaks. These should be picked out and examined with particular care. Repeated and frequent examinations are necessary if one wishes to be reasonably certain that tubercle bacilli are not present, and in doubtful cases centrifugation of the sputum will show bacilli when none have been found by the ordinary methods of examination. The search for elastic tissue fibres does not really belong to the diagnosis of incipient pulmonary tuberculosis. When these are found, softening, however slight, must have taken place. It has even been claimed that the presence of tubercle bacilli in the sputa also necessarily implies breaking down of the lung structure.

(3) *The Tuberculin Test.*

By careful and thorough examination of the lungs and repeated microscopic examination of the sputum, it is usually possible to detect pulmonary tuberculosis at a comparatively early stage, sufficiently early, indeed, to ensure to the majority of the patients a return to health after a more or less prolonged interval, provided that as soon as the diagnosis is made they be placed under the most favourable conditions for recovery.

We have, however, in tuberculin a means of diagnosis which enables the physician not only to make an earlier diagnosis of pulmonary tuberculosis, but to affirm the tuberculous nature of ailments which formerly were not believed to be tuberculous, or, at most, were considered to be the antecedents of a possible or probable tuberculous infection. With



regard to pulmonary disease, tuberculin is especially valuable when the physical examination is inconclusive, and either no sputum whatever can be obtained, or repeated examinations have proved entirely negative, while the suspicion yet remains that the disease may be of tuberculous nature.

Introduced to the medical profession in 1890, by Koch as a remedy for tuberculosis, tuberculin rapidly fell into disfavour as a remedial agent, when it was considered proved that, as used at the time in large doses, it lighted up old tuberculous foci into fresh activity, and tended to disseminate tubercle bacilli into previously healthy parts of the patient's body. In the disappointment that followed this fiasco there were few who remembered that Koch, while speaking of the curative properties of the lymph, had also stated incidentally, that in certain cases tuberculin might prove of value in detecting latent tuberculous foci in various parts of the body. A few of the more sober minded clinicians, however, did remember this statement and put it to practical use. Since that time an ever increasing mass of evidence has accumulated proving the truth of Koch's original observation. In addition to Koch,—Guttman, Ehrlich, Wasserman, Benz, von Jaksch, Landouzy, Trudeau, Penzoldt, Klebs, Beck, Shattuck, and many others both in America and in Europe, have used tuberculin as a diagnostic medium, and all agree in recognising it as harmless and most reliable when used with proper precautions.

The tuberculin reaction consists in an elevation of temperature with a characteristic pyrexial curve, accompanied by more or less malaise, pains in the head, back, and limbs, and sometimes nausea and vomiting. The reaction occurs usually about twelve hours after the injection of a minute dose of tuberculin. It may, however, occur at the end of eight or nine hours, or rarely be delayed to twenty-four hours. The pyrexial curve is quite characteristic; there is a rather abrupt rise to a maximum which is maintained for two or three hours, and then a gradual decline to the normal which is usually reached in from twenty-four to thirty-six hours, and is followed by a subnormal temperature for some time. With the fall of temperature the constitutional symptoms above described subside gradually and the patient returns to his usual state of health. The chart on the opposite page depicts a typical reaction in a tuberculous case.

The method of employing the test is as follows:—For one or two days before the tuberculin is used the patient's temperature is taken at frequent intervals, at least every four hours, and better every two hours, in order that a correct idea of the range of the temperature may be obtained. The injection, with the usual aseptic precautions, is made either early in the morning at six or eight o'clock, or late in the evening at ten or eleven o'clock, so that the reaction may be observed at a con-

venient hour of the day. If it is desired to use tuberculin as a test in febrile cases with intermittent temperatures, the dose should be so timed that the reaction will take place during the period of normal or sub-normal temperature. The site of the injection is immaterial but it is customary to select the space between the scapula and the spinal column. The most important point is really the dosage, and on this there is considerable diversity of opinion. It should be remembered that preparations of tuberculin vary considerably in strength and that individuals react differently to the same dose.

It is a safe rule to begin with a very small dose and, if no reaction occur, to give a larger dose in two or three days. Trudeau advises an initial dose of half a milligram of crude tuberculin. Subsequent doses of 1, 2, and 3 milligrams may be given at appropriate intervals if no reaction occur from the minimum dose. It is not necessary or advisable to exceed a maximum dose of 10 milligrams. Grasset and Vedel gave 2-10 to 3-10 of a milligram for the initial dose and 1-2 a milligram for the second. For children the dose must be proportionately smaller. Hutinel advises 1-20 to 1-10 of a milligram up to 1 milligram.

The tuberculin used must be from a reliable source and the dilution freshly prepared. For purposes of dilution a 1-2 per cent. solution of carbolic acid is used.

In addition to the febrile elevation of temperature and the constitutional disturbance, there is sometimes a little redness and infiltration of the skin at the site of the injection with a little tenderness to touch. This has also been observed at the site of a former negative injection, when a larger dose has subsequently been given and has been followed by a typical reaction. If a patient suspected of pulmonary tuberculosis reacts to tuberculin, a careful examination of the lungs should be made during the period of reaction. It is then sometimes possible to detect some of the early auscultatory phenomena accompanying tuberculous infiltration of the lungs, which were previously absent.

The tuberculin test has been used to detect tuberculous foci not only in the lungs but in the pleura, pericardium, peritoneum, genito-urinary tract, meninges, glands, bones, skin, and mucous membranes. In 68 cases of pleurisy, Beck found that 50 gave a positive reaction, a percentage of 73.2. Of 17 cases of cervical adenitis, 16 reacted, or 94 per cent.; and of 13 cases of adenoids of the naso-pharynx, no less than 12 gave a reaction, or 93.3 per cent. These few examples sufficiently illustrate the value of tuberculin as a diagnostic agent.

Of still greater interest are those cases in which there are present one or more of those pathological conditions that I have referred to as constituting presumptive evidence of tuberculous infection. For instance, in chlorosis, in which Beck in 36 cases obtained a reaction in 19—a little over 50 per cent.

Fallacies in this test may arise from atypical reaction, and from insufficient dosage or inertness of the preparation used. It is also stated that the subjects of syphilis, actinomycosis, and leprosy, have occasionally reacted to tuberculin, but it has not been possible to exclude in these cases a co-existent tuberculous focus somewhere in the tissues.

In conclusion, it must be remembered that a reaction to tuberculin simply indicates that a tuberculous focus exists in the individual. It does not imply that the symptoms which are present are necessarily due to tuberculous infection and not to some other obvious pathological condition. A negative result with maximal doses of tuberculin is really of more value than a positive one, for one may then with certainty affirm, not only that the patient's illness is not of a tuberculous nature, but that there is absolutely no tuberculous focus, old or recent, in any of his organs.

Tuberculin, then, should not be used indiscriminately, but only where a reasonable suspicion remains, after other means of diagnosis have been employed, that the patient's illhealth or actual illness is due to bacillary invasion. In this way we shall avoid unnecessary disturbance of the patient and his surroundings, and not run the risk, for instance, of sending an over-worked, pale, but otherwise healthy bread-winner, with an encapsulated cheesy nodule the size of a split pea, to kick his heels for a year on the verandah of some mountain sanatorium, when two or three weeks of pure air and sunshine anywhere would have brought back the glow of health to his cheek and renewed energy to his tired brain.

ON THE PREVENTION OF TUBERCULOSIS IN ANIMALS,

WITH SPECIAL REFERENCE TO PREVENTION IN THE DOMINION.¹

BY

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Considering that this paper is but one of several to be read to-night on this all important subject of tuberculosis, I have found it necessary in order to comply with the time allowance to restrict my observations to a few of the most important points bearing on the disease as it affects the domestic animals.

THE DANGERS ARISING FROM TUBERCULOSIS IN ANIMALS.

Without taking up your time in discussing whether the tubercle bacilli of man and the different species of animals are or are not identical we will premise that in the organism of the susceptible food producing animals the tubercle bacillus will live, thrive, and exercise its destructive operations, and will produce the disease in many of the lower animals which in turn become capable of transferring it to others and to man.

Experiments have determined beyond doubt that next to man the most susceptible to this disease are the animals most made use of for the food supply of the human family, viz: cattle, swine and chickens. These contract it in the natural way, but it can be produced in sheep, dogs, cats, rabbits, goats and horses, by inoculation with tuberculous material.

Of these food producing animals, cattle, swine, and chickens, are most exposed to the infection and are susceptible in the above order.

I

DANGER FROM TUBERCULOUS CATTLE.

Fortunately but a small percentage of the cattle affected by tuberculosis are affected in organs from which the bacilli can readily escape so as to become the infecting agents to other animals. There is a widespread, popular error on the subject of infection by this disease, and the question is often asked:—Why is tuberculosis not much more common than it is? The answer is, that only a small proportion of tuberculous people or animals are infective and that all people and animals are not equally susceptible.

¹ Being a contribution to a discussion on the "Prevention and Cure of Tuberculosis," at the Montreal Medico-Chirurgical Society 17th April, 1899.

We can separate affected animals into two classes, viz:—those that are *actively infective*, and those that are *possibly infective*.

The first includes milking cows with tuberculous udders: investigations have shown these to be very virulent. The infective milk from one diseased udder may render the whole milk of a dairy dangerous to people or young animals fed on it unsterilised. The milk from a diseased udder sent to a creamery or cheese factory may render its products, butter and cheese, infective to people consuming them:—and the by-products skim milk and whey may be the means of infecting calves, pigs or poultry which are fed on them. Milk from tuberculous cows with healthy udders is seldom infective.

Of 7 calves fed on the milk of such cows at the Outremont Experiment Station last year, not one contracted the disease as we proved by post-mortem examination—nor was the disease produced in 46 guinea pigs and 42 rabbits inoculated with the milk of these animals, with three exceptions, two being guinea pigs and one a rabbit. Milk from tuberculous animals is, therefore, but slightly infective when the udder is not tuberculous, whereas it is very virulent when it is diseased. Therefore as a preventive of communication of tuberculosis from cattle to man, milk should be obtained from healthy cows only; and should be protected from infection after it has been drawn from the cow.

The same preventive measures will apply to calves and pigs, as they being fed largely on milk and by-products of the dairy are equally exposed to infection from milk.

In animals suffering from thoracic tuberculosis especially when the tubercular masses communicate with the bronchial tubes, or when the laryngeal or peribronchial glands are the seat of the disease, the bacilli are coughed up and ejected in the sputum, dry up and in time are carried about in air currents, and, gaining entrance to the lungs of other animals, by inhalation, reproduce the disease. Such animals are particularly dangerous to other animals housed in the same building and cohabiting with them. They are also dangerous for attendants who necessarily spend a considerable portion of their time in close contact with them, and frequently inhale infective dust during the sweeping of the byre.

Animals suffering from tuberculosis of the intestines, kidneys, or liver, may also be considered actively infective, as the bacilli may be discharged in the effete products of these organs, and, once set free, there are many ways in which they gain access into the bodies of other animals there to work their destructive effects on the invaded tissues and organs of their hosts.

The second class, *possibly infective*, embraces by far the largest proportion of cases, in which, while the disease may be extensive and its

effects severe, yet none of the organs above mentioned are involved and escape of the bacilli cannot directly take place. A large proportion of tuberculous animals which show no clinical symptoms yet give a reaction to tuberculin, are included in this class. In some, the post-mortem lesions are very slight, and the tubercle will have to be carefully looked for. It may be found in a small gland in any part of the body, most frequently in the bronchial, peri-bronchial, or mesenteric, and occasionally in a bone or joint. The tuberculin test, while a valuable aid to diagnosis, will cause as much reaction in these obscure cases as in more pronounced ones, and in animals suffering from advanced disease often no reaction follows injection owing to a superabundance of the toxine in the system already. We may have extensive miliary, mesenteric or pleural tuberculosis with pronounced symptoms, yet escape of the bacilli may not occur until an extension of the disease occurs involving the lungs, udder, uterus, intestines, kidneys, or liver, when they immediately become actively infective.

An animal or person may continue for years in the non-infective class, yet the change takes place so suddenly or so insidiously in many cases, that it would be very unwise to deal with any case of tuberculosis as non-infective.

Dr. Sims Woodhead referring to the subject, says (Report of Royal Commission) "A most important point is that the spread of tubercle in the udder goes on with the most alarming rapidity:—this I was able to observe in cows constantly under observation, but also noticed, on several occasions during the interval between fortnightly inspections carried on along with a Veterinary Surgeon, that the disease had become distinctly developed. It may be, of course, that the early evidence had been overlooked at the previous inspection, but whether this was the case or not the spread of the disease was so rapid, as to afford very good ground for alarm."

The very absence of any definite signs in the early stage is one of the greatest dangers of this condition. Both Dr. Martin and Dr. Woodhead insist that no tuberculous animal of any kind should be allowed to remain in a herd.

INGESTION OF FLESH OF TUBERCULOUS ANIMALS.

Of the danger from the consumption of meat from tuberculous animals, I wish to make it clear that the popular estimate of the danger from this source of infection is, on the whole, exaggerated, and as a matter of fact, except in advanced cases of generalised tuberculosis in cattle, it is very slight. Experiments have demonstrated that while intraperitoneal injection of muscle juice will produce tubercle, the ingestion of the same flesh will prove negative in nearly every instance. (Nocard).

It may be taken for granted that if meat from animals suffering only from localised tuberculosis, is carefully handled and no infective matter smeared over it from the hands, knives, or saws of the butcher, is allowed to stand for a few days in a refrigerated chamber, and is thoroughly cooked, it can be eaten with impunity.

As a matter of fact tuberculous meat is frequently foisted on to the public and no bad results seem to follow, at least so far as is known. At the same time there is a certain danger from smearing with tuberculous matter, and from insufficient cooking, consequently it is clearly the duty of sanitarians to limit the sale of meat from tuberculous animals to cases of limited invasion and under very reliable supervision. The same remarks apply to pork in all its forms, but the danger from meat infection in pigs is even greater than in cattle, owing to sausages and hams being more frequently eaten under-cooked.

Tuberculous chickens are still more dangerous owing to the consumption of the giblets in which the tubercle may be concentrated. Fortunately, however, they are usually thoroughly cooked and raised to a temperature which kills the bacilli. Yet, reports show that chickens are not infrequently the means of infection in the human family, and while the chicken tubercle bacillus may not be identical with the human, yet the human bacillus will live and thrive in the organism of the chicken, producing tubercle, which, reintroduced to the human body will produce tuberculosis. The expectoration of tuberculous patients in poultry-runs should be absolutely prevented.

Rabbits. While rabbits contract tuberculosis when exposed to infection, the disease is unknown in them in the feral state, consequently, no apprehension may be felt in using rabbits as food.

While every conceivable precaution should be exercised to prevent the communication of animal tuberculosis from the food-yielding domestic animals to man, equal care should be exercised in preventing the communication of this disease from tuberculous people to these animals. Consumptive people are generally regarded as almost as dangerous to the health of cattle, pigs and poultry as are tuberculous cattle, pigs, and poultry to humanity. Here, however, mention must be made of Theobald Smith's recent observation that the bovine bacilli may be as much as thirty times as virulent towards the animals of the laboratory as are human bacilli.

Tuberculous patients, both human and brute should be isolated, and other people and animals protected against both direct and mediatory infection.

II

IS IT POSSIBLE AND PRACTICABLE TO ERADICATE TUBERCULOSIS ?

I have frequently stated my belief that it is both possible and practicable to rid Canadian herds of this disease completely; and that by the

expenditure of an amount of money trifling in itself as compared with the enormous benefits that would accrue to the Live Stock industries of Canada, which are rapidly growing, and even now represent a large proportion of the country's wealth, while yet it is even at the commencement of its development.

Considering that 45 per cent. of the population of Canada is engaged in rural pursuits; that the railroads depend on agriculture for one-fourth of the freight they carry, and the canals one-third; that the shipping interests depend chiefly upon the produce of the farms and ranches, and that more than one half of the total exports are agricultural products—the value of which for 1897 amounted, according to the Year Book, to the sum of \$55,533,592, (of which \$9,937,723 was the amount received for horses cattle, sheep, swine, other animals and poultry)—surely no reasonable expenditure can be justifiably withheld by the Government to eradicate any disease that interferes with the development of an industry of such importance to the country's prosperity.

We have no statistical information of the number of animals or even of herds affected by this disease, so that it is impossible to estimate accurately what the cost of eradication of tuberculosis might be—but tests have been made during the past year to a considerable extent in every province of the Dominion, numbering over 10,000 head in *suspected* herds, and of these *only 5% have been found tuberculous.*

From the foregoing remarks it will be seen that the proportion of the affected animals which would have to be slaughtered and sacrificed (those only which showed clinical symptoms) is small; probably throughout the entire Dominion 10,000 such could not be found; which even at full value would not exceed \$250,000. Those reacting to tuberculin would, of course, be much more numerous; but of these reacting animals 70 per cent at least could be fed and slaughtered for beef under supervision; certainly that percentage would be found very slightly affected and their meat would be quite fit for food, and this is what should be done with all cattle of no special value for breeding purposes. The remaining 30 per cent. of carcasses should be destroyed by putting them into the rendering vats, indemnity being paid in the manner subsequently recommended.

In the case of highly bred cattle, in which no clinical symptoms are discoverable, they may be kept in isolated buildings and bred from under the system carried out in Denmark, known as "Bang's system;"* as symptoms develop they should be slaughtered. The number that would

* Prof. Bang has these animals isolated in special buildings or closely partitioned-off portions of byres, bred from, their calves removed as soon as dropped to non-infected buildings and fed on milk from tested cows or sterilised milk. They are tested semi-annually, any that react are killed. Over 90 per cent. of the calves can thus be raised healthy.

require to be killed would decrease year by year, and the full compensation, while not amounting to much, would stimulate owners of diseased herds to have them tested and dealt with as found necessary.

Just think what a safeguard to public health as well as health of animals it would be to have every animal showing clinical symptoms—those in fact which are most infective,—removed, and all known to be diseased prevented from being moved about, by quarantine measures.

It may be asked:—Would these measures not be attended by considerable disturbance of trade and general inconvenience? No indeed; it would stimulate the cattle trade. Those who are fortunate enough to possess healthy herds would find ready purchasers in those whose cattle had been killed and paid for; slaughter would immediately be followed by disinfection and restocking, in most cases by better bred, and in all cases by healthy cattle.

It is quite evident that if the above suggestions were carried out, tuberculous animals would be in a few years difficult to find in Canada.

Knowing as we do the intercommunicability of human and animal tuberculosis, we can readily understand that any attempts to eradicate the one must be simultaneous with like action in relation to the other—and here I wish to appeal to the medical profession to do their share of this great work of eradication.

No one nowadays doubts the contagious nature of this disease in either man or animals, yet while the Veterinary Profession, and Agricultural Departments throughout the civilized world have for years been moving strenuously to limit and prevent it in animals, but little has so far been done in this connection by the medical profession in dealing with human beings. Not only have they acted with unaccountable apathy so far as adopting any radical preventive measures among their patients, but little has been done to inform the people of the true state of affairs, or to point out to them the many ways by which the contagion is spread.

Surely, at least, the public should be told of the danger especially to young children, of being fondled and kissed by consumptives. Surely parents should be advised how to prevent the extension of this disease among members of a family by isolation. Surely the owners or tenants of houses occupied by consumptives ought to be compelled to thoroughly disinfect, and so renovate the walls and floors as to remove all danger to subsequent occupiers. Surely it is time that special carriages were provided for consumptives for the conveyance to those health resorts to which medical men send their patients, by the railroad companies over whose lines they travel. Time and again have I witnessed on Western roads leading to Colorado shocking disregard of all preventive precautions in this connection.

We need not go beyond our own city to look for instances of families in which members one after another have fallen victims to this disease through contagion, yet sympathetic friends, often accompanied by little children, are allowed unrestrictedly to visit the poor patients, who, cheered by their visits and delighted to see and fondle the children, in their ignorance impart the infection to their young and susceptible bodies, setting a seal of death which will overtake them at an early age.

It was with more than ordinary satisfaction that I read the admirable address delivered by Sir William Broadbent a short time ago at a meeting convened by H. R. H. the Prince of Wales at Marlborough House to inaugurate the National Association for the Prevention of Consumption, the mission of which is "to carry into every dwelling in the land an elementary knowledge of the modes in which consumption is propagated, and of the means by which its spread may be prevented." "To this end," he says, "the public attention must be captured, the public imagination must be impressed, the defensive instincts of the general public must be aroused."

HEREDITY.

As most of my hearers have no doubt read the address I will make but one other quotation from it which I hope will impress everyone present as an endorsement of expressions which I have repeatedly made on the subject of heredity in this disease :

"It is now definitely known that consumption is a contagious disease, and communicable from animals to man; and that it arises in no other way. It is not an inherited vice in the constitution which declares itself in course of time; but, while some constitutions are more prone to it than others, and while an unhealthy mode of life and unwholesome surroundings predispose to its attacks, every case of consumption is derived from some pre-existing case."

III

THE TUBERCULIN TEST AND ITS RESULTS IN ANIMALS.

Happily in this country but little time was lost in conveying to our agricultural population a true account of tuberculin and its effects on animals: as a consequence, the objections raised against it in other countries as a result of ignorance of what it really is, had not to be combated here, to any large extent at least. The efficacy of tuberculin as a test, is well-known throughout the Dominion.

As previously stated, within the past twelve months over ten thousand cattle have been tested at Government expense from the Atlantic to the Pacific; and of the large number of post-mortem examinations made scarcely a failure to discover the tubercle has been reported; thus, of 100 post-mortems made by Travelling Inspector Dr. A. E. Moore every one was tuberculous; of sixteen killed at the Central Experiment Farm, in only one animal did we fail to find the disease. Of ten cows killed at the

Outremont Experiment Station it was found in every one, although no clinical symptoms were presented during life.

We failed to find tubercle in seven calves from 6 to 9 months old which gave no reaction to tuberculin. Doctor Moore assisted me in making twenty-seven post mortems in a herd in the Eastern Townships and we found tubercle in every single case.

Of 13 animals imported from England tested in the quarantine at Point Levis, tubercle was found in every one. Numerous similar experiences could be given.

I must not be understood, however, to say that there are no objections raised to the use of tuberculin in Canada. It is strongly objected to by owners of tuberculous herds, not on the grounds of being in any way injurious to the cattle, but on account of its remarkable accuracy in diagnosing the disease. It detects the slightest existence of tubercle, but it in no way indicates the extent of it, and where animals are condemned on its evidence alone, it is asserted that many are thus condemned which would have recovered;—but as a matter of fact no animals are condemned without a careful clinical examination.

This argument would have point if slaughter of all reacting animals was made compulsory, but such is not the case, nor is it ever likely to be so. Our experiments with tuberculin conducted at the Experiment Station, Outremont, clearly demonstrated the unreliability of second and subsequent tests. Seven cows when first tested at Ottawa gave a reaction indicative of the disease; when tested thirty days subsequently only one of them reacted. Three months afterwards double doses were injected into two of them without reaction and five days later quadruple doses were given the same cows without result.

Tuberculin and other animal toxines should be placed under Government control as are chemical poisons.

The knowledge of the unreliability of any but the first test led to fraudulent practices by cattle dealers bringing stock into France, and M. Nocard and M. Roux together set to work and discovered a new tuberculin which will cause reaction no matter how recently Koch's fluid has been injected. This however, for obvious reasons is a Government secret which M. Nocard informed me he is not at liberty to make public or even divulge to professional friends.

IV

HOW IT IS DEALT WITH BY THE DOMINION GOVERNMENT.

So far the action taken by the Canadian Government has been confined to efforts made to inform the people of the nature of tuberculosis, how the disease spreads, how to prevent and how to diagnose it, how to deal with a diseased herd, how to disinfect premises and to dispose of

tuberculous carcasses,—by means of bulletins, and itinerant lecturers who address farmers' meetings during the winter months.

Much has been accomplished by free testing by Government Veterinarians, appointed after special examination, who have been authorized to do the testing throughout the Dominion. Dr. A. E. Moore is Traveling Inspector specially for instructing, testing, and investigating.

When an application is made on the prescribed form by an owner of cattle, an inspector is instructed to make the test and transmit the charts to the department for the decision of the Chief Inspector.

When any of the cattle react two degrees, they are pronounced tuberculous, provided that there are no attendant circumstances which account for the rise in temperature, a clinical report having to accompany each chart in which diseased or suspicious animals are indicated.

Diseased animals are forthwith removed from the herd, and placed in an isolated building where they are quarantined and thenceforth cannot be sold or removed, nor their products utilised under the penalties provided in the Animals Contagious Diseases Act, so that the herd is thus placed beyond the possibility of extending the disease.

No provision has so far been made by Parliament for the payment of indemnity for animals slaughtered and under ordinary circumstances no indemnity is paid.

All cattle imported from Europe, in addition to being kept three months in quarantine, must be accompanied by charts and certificates of testing in the country whence exported to Canada immediately prior to exportation, or else be tested in quarantine in Canada; and from the United States, all cattle to be admitted for breeding purposes shall be accompanied by:—

(a) A declaration made by the importer that they are actually for breeding and no other purposes.

(b) A certificate signed by a Government Veterinarian that they have been subjected to the tuberculin test and found free from tuberculosis. Such certificate must show the date of testing and chart of reaction with a description of the animal, giving age and markings. The importer may be required to swear that the certificate refers to the animal represented.

(c) A certificate of inspection signed by a Government Veterinarian showing that the animals are free from contagious disease and that no contagious disease of cattle (excepting Tuberculosis and Actinomyces) exists in the district whence they came.

(d) When not accompanied by such certificates the animal or animals must be detained in quarantine one week and subjected to the tuberculin test.

(e) Should they be found tuberculous they must be returned to the country from which shipped, or slaughtered without compensation.

These regulations being reciprocal, and it being necessary for Canadian breeders who sell to American buyers to have their herds tested, much general good has been accomplished by this testing without cost to the Government.

The result of this method of dealing with it has been a marked lessening of the disease in the country at a minimum of expense. I know that I am within the mark in stating that as compared with five years ago tuberculosis has been reduced in Canada by at least thirty per cent.

This can be illustrated by the following facts.

In November last, owing to the experiments which were being conducted at the Experiment Station at Outremont having been completed so far as the cattle then on hand were concerned, they were slaughtered for post mortem examination.

The Station is now about to be opened, but I have found it impossible notwithstanding the number of Inspectors in the field to find cattle presenting clinical symptoms. I have heard of one man who owns a few, but he, believing that he has a corner in them, holds them at unreasonable figures; and as to diseased udders I have so far failed to find a cow in milk with a tuberculous udder, which we could procure for experimental purposes; some have been met with but not giving milk.

These facts while very gratifying from an economic point of view are far from satisfactory. Having educated the people and got them to realise the importance of the matter, why should energetic action be longer delayed, since delay is attended by so much prospective and continued detriment to the live stock interests of this great agricultural country?

I have been asked to give you my views as to what special action and legislation would be necessary. In complying with this request I wish to state that it is not done in any official capacity but to meet your wishes in your praiseworthy efforts to interest the public.

SUGGESTED ACTION AND LEGISLATION.

The time has surely come when more energetic if more expensive methods should be employed to terminate this menace to the health of men and animals. The Government acted wisely in moving cautiously in this matter, it took time and much patiently acquired experience to arrive at a full knowledge of the disease in all its relations in man and animals, before deciding on radical measures or large expenditure.

Hitherto professional men hesitated to recommend, and politicians refused to assume the responsibility of voting large appropriations for this purpose, and wisely, too.

Now, however, years of investigation and experimentation by scientific men in numerous and independent countries, having resulted in a clear

elucidation of most of the moot points relating to tuberculosis in animals, and there now being no tenable argument for longer permitting this preventable disease to continue in our midst, when it can be shown, as I have endeavoured to do, that for a comparatively small amount, it can be completely stamped out, surely it is the duty of the government to take active measures at once for its eradication.

I trust that this association will endorse these views and will recommend that Parliament be asked to vote the necessary funds to enable us to get rid of at least every immediately infective bovine in Canada.

When we consider the direct bearing this disease in our cattle has on public health and on our agricultural prosperity which influences to such a large extent (as I have shown in my introductory remarks) the railroads, canals, and mercantile marine, we must admit that the stockmen of the country should not be called upon to bear the whole loss incurred in bringing about a more sanitary condition of the food supply of the people.

The country should share the farmers' burden, and when cattle have to be killed and sacrificed, I would strongly recommend that full indemnity up to the health value, not exceeding \$50 for one animal be given as compensation,—*during the first three years*. After three years the compensation should be as provided for in the Animals Contagious Diseases Act, viz:—one third, for actually diseased, not to exceed \$20; three fourths when killed for being in contact, in the case of grade animals not to exceed \$50, and in case of thorough bred animals two thirds, not to exceed \$150.

As already stated, of the reacting animals at least 70 per cent could be fed and killed for beef, under supervision.

The 30 per cent. so killed and sacrificed, in consideration of the cost of keeping and feeding should be compensated for at full value, ascertained by weighing the carcasses.

It might not be expedient to make testing compulsory; nor would it be necessary, as in a very short time no one would buy an animal without a test or guarantee of freedom from tuberculosis,

I have stated above that probably a sum of \$250,000 would be paid out for compensation during the first year; this sum would be greatly lessened each year. The administration would cost about half as much more. Suppose \$400,000 was voted as a special appropriation for this purpose for the first year, it would only be a pittance expended for the benefit of not only the farmers but the whole population.

The number which would have to be slaughtered the following year would be reduced by about 75 per cent. Three or four years of active work ought to come very near complete eradication, provided the owners

of cattle coöperate in the work as I believe they will if just compensation be paid to them.

V

IMPORTED CATTLE SHOULD BE TESTED.

The alarming prevalence of this disease in Great Britain, France, Germany and Denmark, whence breeding cattle are imported for the improvement of Canadian herds, should lead our farmers to be very careful in ascertaining beyond doubt that all importations are free from tuberculosis.

They should not only see that none but the most trustworthy agents are employed to purchase an animal in Britain, but that the agent has personally superintended the tuberculin test, and that he obtains a declaration from the seller that the animal has not been injected with tuberculin for three months previous to the date of purchase.

Our experiences at the Cattle Quarantines, especially at Halifax and Quebec, demonstrate not only the necessity for these precautions but the unreliability of testing done in Britain. One importation of fourteen high class short-horn cattle, which was accompanied by a chart of testing and a certificate of freedom from disease, on being tested in quarantine eight weeks after, showed thirteen to be diseased, one being in such an advanced stage that she died from it in quarantine. The remaining twelve were slaughtered and tubercle found in each; in two it was extensively generalised.

It is impossible to estimate the serious damage and losses that probably would have occurred among the short-horn herds of this country if this herd had not been tested in quarantine but had been allowed to be dispersed one here, one there, in perhaps a dozen healthy herds; or more properly speaking, it would be difficult to compute the saving to Canadian live stock interests by the testing at Point Lewis of this one herd. Yet so blind are the breeders to their own interests that we find breeders' associations passing resolutions urging the Government to allow cattle to come in without being tested!

There is no defensible objection to tuberculin testing. Tuberculin as it is prepared contains only the toxine of the bacilli, sterilised by heat, filtered through porcelain. As well might we endeavour to produce barley from alcohol as tuberculosis from tuberculin; in fact it has been demonstrated beyond dispute that it does no harm whatever.

I am pleased to find, however, that the past year's experiences have induced several of the strongest objectors to the tuberculin test, men owning some of the largest and most valuable herds in the country to change their views, and several of them have had their herds tested, and it is to be hoped that before long there will be a voluntary and combined effort among Canadian stockmen to second the efforts and

strengthen the hands of the Minister of Agriculture in his laudable desire to see this disease completely eradicated from our herds.

In conclusion, gentlemen, allow me to congratulate the Society on the interest manifested by you in this important subject—specially important as a matter of public health, very important as affecting the cattle industries of this great agricultural country, and of no less importance as affecting the commercial and trade interests of Canada.

ON SANATORIA:—LOCALITY AND CURE.*

BY

A. J. RICHER, M.D., of Montreal.

Tuberculosis, which has figured prominently in medical history since its earliest days, has been treated in every conceivable way. Climate, however, seems to have met with the greatest favor, but the question of localities has been much disputed throughout centuries.

We are indebted to Brehmer, of Goebersdorf, for having successfully established a systematic treatment, consisting of absolute rest, open air life, and an abundant supply of very nutritious food, which was conducted under his strict supervision in a closed establishment, a sanatorium. Since then, his methods have been modified, both on the continent and in America. Dr. Trudeau, in the Adirondacks, has adapted the sanatorium life of the continent to American ideas, by his cottage plan of habitation, with a central administration building. In Canada, we have a duplicate of the far famed Adirondack Sanatorium, at Gravenhurst, Muskoka, situated at an elevation of somewhat less than 800 feet above sea level, which has for the last two years been doing very excellent work. The Loomis Sanatorium, at Liberty, N. Y., which is situated at an altitude of 2000 feet on the N. Y. O. and W. Ry., at a distance of 119 miles from New York City, on a plateau adjacent to the Catskills, offers similar advantages to our own Laurentian Range. The winters are long, cold and dry, the summers cool, the soil sandy and porous.

The Adirondack Institution, situated at an elevation of some 1500 feet, is so well known that it need not here be described. The Adirondack Mountains, as a part of the Laurentian formation, are very similar to our own Laurentian Mountains, and what may be said of one, applies almost in every way to the other. The Trembling Mountain district of the Laurentian Mountains, offers every advantage for the treatment of incipient tuberculosis. Open air life can be carried out throughout the year. The thermometer registering 30 or 35 degrees below zero, makes one feel as though standing before a blazing fire, so stimulating is this dry and cold atmosphere. But the winters are not constantly so cold. The winter mean temperature, roughly estimated, has been a trifle over 17 degrees above zero during this last winter at Ste. Agathe, near the site of the Laurentian Sanatorium, now nearly completed, and situated

* Being part of a Discussion on the "Prevention and Cure of Tuberculosis" at the Montreal Medico-Chirurgical Society, April 1st, 1899.

at an elevation of 1500 and some odd feet. It is unfortunate that meteorological observations have not yet been systematically made in that particular region, but from enquiries and frequent visits made during the last nine months, little doubt exists in my mind as to the suitability of this district for the treatment of incipient tuberculosis. It is our intention, during the coming year, to make minute observations upon temperature, rainfall, winds, barometric pressure, hygrographic records, &c., &c.

Clinically, one may classify cases more or less easily, but therapeutically, it is a little more difficult, and now, as in days gone by, particular regions, altitudes, climates, latitudes, &c., have their critics, as well as their adherents. The favorite resort of to-day, may be the forgotten one of to-morrow, and this as a result more or less of the agitation of climatologists ever busy, and the general public forever thirsting for new health resorts. We should not, however, lose sight of an important point in connection with the treatment of tuberculosis; that, a cure, in order to be permanent, should as much as possible be obtained or looked for in the climate in which the patient lives or intends to live permanently. Von Leyden, at the International Congress at Moscow, in '97, emphatically laid stress upon this point, quoting verbatim the words of Knopf in his Paris thesis of 1895. This phthisio-therapeutist (Dr. Knopf) even now inclines to the idea that all other things being equal, altitude is a very negligible quantity. A sanatorium to be opened next month at Suffern, N. Y., at an altitude of less than 400 feet, is to be closely watched as to its results by this observer, and to us, accustomed as we are to look upon altitude as a necessity, it will be extremely interesting to read the first annual report of this institution.

Climatic advantages, with regard to treatment, are more apparent than real. Cases of lymphatic and glandular tuberculosis, however, seem to be an exception in this respect, and sea air undoubtedly appears to exercise marked influence upon this class of cases, acting almost as a specific against this particular form of tuberculosis. Fibroid purulent and hæmorrhagic varieties of the pulmonary form, however, should be treated in a sanatorium, in a climate as nearly similar as possible to that in which the disease developed, or where the patients are likely to live permanently. High altitudes, such as are met with in different parts of Colorado, of course would not be suitable for hæmorrhagic cases, or other forms complicated by heart disease. Kamloops, B. C., at an altitude of 1100 feet, with as dry a climate as Colorado, and a mean temperature of 5 degrees above that of Montreal, with a greater uniformity in temperature, would no doubt offer a very fine site for a sanatorium.

The subject of relative advantages for different classes of patients is an important one. They may be briefly classified as:—

1st. Lymphatic and glandular forms of the disease, which may derive a certain amount of benefit by open air mountain life, but are more likely to improve by a prolonged sea trip.

2nd. Incipient pulmonary forms, and some of the cases where softening is just commencing, which, according to the district in which they live, may be sent either to the Adirondacks, Gravenhurst, or the Laurentians.

3rd. Far advanced cases, where softening is marked in one or both lungs, with more than one cavity, which had better be kept at home under appropriate sanitary regime, as their presence in a sanatorium exercises a demoralizing influence upon the other patients. These latter cases should be specially cared for in a City hospital, conducted upon the same principles as our civic infectious hospitals, and at the expense of the City, or State, or both.

In Montreal, during the year 1897, we had 827 deaths from tuberculosis, i. e., more than 10 per cent. of all deaths which occurred during the year, which are enumerated and classified under more than 100 different forms of disease as causing death, and of which only one other gave a superior number, i. e., gastro-enteritis, 1396 deaths, 1231 of which occurred during the first year of life. This gives about 2.7 deaths from tuberculosis per thousand of population, which is not above the average for cities of its size on this continent. When one considers the fact that this disease is now successfully treated by absolute rest, proper hygiene, open air, and a liberal diet, one cannot help asking why the Government of the Province does not take the matter in hand and treat in this way as many cases among the poorer classes as can conveniently be treated, and they in turn, being restored to health, would, by their systematic life and knowledge acquired during their stay in State institutions, educate others in how to prevent the spread of this dreaded scourge. Our local and provincial Boards of Health should be asked to take active steps in the matter of the prevention of the disease, while our local government should at once attempt to do something for our consumptive poor. With such associated forces, we should within five years reduce the mortality by one-half, and within ten years, be rid of "the plague of the North."

It is strange, but true, that when a physician tells a patient that his lungs are weak, said patient never dreams for a moment that he is sick. His disease to him is not a disease, and often only a pretext for a holiday, and usually he makes the best of it at some fashionable resort. Given the same patient outside of the discipline and watchfulness of an

institution, even though you may at great length describe within well defined limits his mode of life at a health resort, you will invariably discover that the lesson given most minutely, has been just as minutely forgotten in the course of a few weeks. No patient requires more constant supervision, more tactful handling, and more sympathetic treatment, than does a phthisical one.

The experience of the last thirty years in sanatorium treatment, has proved its value beyond the shadow of a doubt. The results obtained by Brehmer, Dettweiler, Driver, Szontagh, Meissen, Trudeau, Sabourin, Darenberg, Theod. Williams and many other phthisio-therapists, are proof positive of the absolute curability of 23 per cent. at least of all cases treated, and the arrest of the disease, or marked improvement, in 60 per cent. of the remainder. At present it is the only treatment giving uniform results, and until such time as an anti-toxine with rapid and direct action shall have been discovered, it remains our strongest weapon of defense.

But if you want your patients to derive benefit from sanatorium treatment, don't keep them at home until you can do no more for them, send them to an institution as soon as you are satisfied of the nature of the trouble, and the earlier you do so, the better for the patient, as well as yourself.

THE SYMPTOMATOLOGY OF TUMOURS INVOLVING THE HYPOPHYSIS CEREBRI.*

BY

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It is generally recognized that tumors of or involving the pituitary body may in addition to the results arising from local or general cerebral pressure induce symptoms directly due to destruction or interference of the function of this structure. It is generally admitted that the hypophysis is either enlarged or diseased in every case of acromegaly.

What relation the changes in the pituitary body bear to the acromegalic symptoms is however still a matter of speculation? A number of cases of tumours involving the destruction of the hypophysis have been reported, chiefly by Weir Mitchell, Drs. Anders and Cattell, and Guy Hinsdale, where no symptoms of acromegaly were present.

This paper is chiefly a record of two cases of a similar character, in neither of which were there any symptoms of acromegaly. In one case the symptoms in addition to the direct cerebral pressure signs resembled a mixture of myxœdema and pernicious anæmia, while in the other the symptoms were those of a somewhat rapid infiltrating neoplasm of the anterior part of the base of the brain.

CASE I.

Perithelial Angio-Sarcoma of the Pituitary Body—Symptoms—headache, vomiting and temporal hemianopia—Finally infiltration of the growth into the ethmoid and sphenoidal cells causing hæmorrhage from the nares—No symptoms of acromegaly or other forms of nutritional disturbance.

Miss K., aged 35, a miniature painter, was admitted on the 2nd December '98, complaining of headache, dimness of vision, and occasional vomiting. She says that the headache and dimness of vision have been troublesome for upwards of eighteen months. The failure of vision was noticed first in the left eye and she observed that the pupil of this eye was larger than the right. Three months previous to admission the sight of the right eye was found to be also failing, and the pupil of that eye to be becoming larger. The vomiting which occurs about every month, lasting from one to three days, was first noticed on March of 1898.

* Read at the 14th Annual Meeting of the Association of American Physicians, May, 1899.

She was born in Eastern Ontario, and always lived there, except for a period of 6 years, when she resided in the state of Illinois. With the exception of measles and whooping-cough there is no history of any illness. She has four brothers and five sisters living, all in good health. One brother died from pulmonary tuberculosis, and a sister from heart trouble. She was much worried for months previous to the onset of headache and dimness of vision, and had been treated for nervous prostration.

Present Condition. She is a tall and well nourished woman, 35 years of age. She is able to walk about but prefers lying in bed on her back, as in this position she suffers less from headaches. She is more than ordinarily intelligent, her mental state on admission being as far as she herself or others could judge, fully normal.

Headache. Pain in the head is her great complaint. It is referred chiefly to (1) the left temporal and parietal regions; in the left eyeball and over the left brow; (2) to the occiput, just below the occipital protuberance, shooting downwards and often forwards, on both sides often entirely circling the neck.

The pain she says is continuous but it is frequently intensified especially on movement, on percussion and at times spontaneously.

Dimness of vision. Three months before her admission into the hospital, Dr. Stirling had an opportunity of examining her eyes and found the following condition present.

Right Eye. 5-9, outer half of the field gone, light perception reduced 5°; the pupil active to light and accommodation but indirect action from left eye lost.

Left Eye. Light perception reduced 8°. She is able to count fingers at 2 feet in the lower and outer part of the field but nowhere else. Pupil is 7 mm. in diameter, immobile to light and accommodation. There was a slight non paralytic divergence.

There was simple atrophy of both optic nerves, without any diminution in the size of the large vessels.

Three months afterwards, Dr. Buller found a more advanced condition of atrophy there being just perception of light in the left eye, and a marked diminution now all over the right field. He also reported a state of simple atrophy without diminution of the large vessels. The diminution of light perception in the right eye was so marked that he was not able to map out the field.

Her voluntary power is not in any way impaired. Nutrition is good. The knee jerks are much diminished, while the superficial and organic reflexes are normal. There is no disturbance of any form of the muscular sense. The general sensibility is not in any degree impaired and with the exception of the disturbance in the functions of the optic nerves already referred to the special sense nerves are normal.

Menstruation began when she was thirteen years of age and continued one year when it permanently ceased.

The urine had a sp. gr. of 1025 contained $\frac{1}{2}$ per cent. of albumen together with numerous granular and hyaline casts.

The subsequent course was characterised by more or less continuous and severe headache, by occasional vomiting, and gradually increasing stupor. A few days previous to her death on the 7th Jan. '99 there was a discharge of a bloody fluid from both the anterior and posterior nares. The immediate cause of death was hyperpyrexia.

I am indebted to Dr. A. G. Nicholls, assistant pathologist to the Royal Victoria Hospital for the following account of the post mortem.

In addition to the morbid changes met with the brain, the following were found:

There was a subacute diffuse nephritis in both kidneys. The uterus infantile in type, being only 5.25 c.m. long. The ovaries were small, fusiform in shape and without noticeable scarring, and slightly fibroid.

The Brain. The calvarium was normal. The dura was thin showing the convolutions of the brain through its substance. It was congested and exuded blood. The convolutions were flattened on both sides, chiefly over the vertex and posteriorly. The frontal convolutions appeared to be normal. There was considerable exudation of clear fluid about the base of the brain.

On removing the brain a tumour mass was found at the base, lying in the sella turcica, and occupying the site of the pituitary gland, of which no vestige could be seen. The tumour measured 5 cm. long by 4.75 cm. broad. The upper surface was lobulated, forming grape-like masses of a reddish translucent colour, of soft consistence, and hæmorrhagic appearance. There were two large lateral lobes with 3 smaller ones anteriorly. The under surface of the tumour was very soft and diffuent, of the appearance of raspberry-jelly. This was probably due to manipulation. The tumour lay in the median line with a tendency to the left side. There was an oval excavation on the base of the brain in which the mass rested. The sella turcica was greatly enlarged in all directions corresponding to the main mass of the tumour below. The body of the sphenoid was eroded from pressure, the bone being as thin as paper. The sphenoidal and ethmoidal cells contained a jelly-like mass similar to the tumour. The posterior nares contained blood-stained mucus. On the left side in front the tumour passed beneath the dura of the cranial base reaching along the lesser wing of the sphenoid as far as the back of the left orbit. It had not, however, invaded the orbit. The growth had reached the top of the pharynx without causing any perceptible bulging. The tumour pressed directly upon the optic commissure which was flattened. It reached backward to a point 2 cm.

anteriorly to the pons, compressing the left crus. Other cranial nerves seemed not to be directly involved.

The specimen was hardened in Lulk in formol—Müller.

At closer inspection the mass was found to be bounded, at least above, by a thin fibrous membrane, presumably the pia mater. Several sections were made through its substance, and through the optic chiasm, pons, medulla, left crus and cord.

Microscopically, the tumour was found to be enclosed in the upper surface by a laminated fibrous tissue membrane, presumably the pia mater. The finer structure of the mass varied somewhat in different parts. In the main it consisted of delicate capillary blood-vessels with elongated cells having oat-shaped nuclei. The blood-vessels were composed of basement membranes lined with flat endothelial cells; they were for the most part small but in a few instances formed actual cavernous sinuses. The elongated cells were arranged about the blood-vessels, their long axes being placed radially to the centre of the vessel. This gave the tumour the appearance of being formed of a series of rings. In other places the elongated cells formed long finger-like processes running in various directions and without the same definite relationship to the vessels. On the under surface of the tumour small spicules of bone were seen showing that the new growth had forced its way through the body of the sphenoid. At the margin of the growth two or three very cellular nodules were seen which had a close resemblance to round-celled sarcoma. On the whole as the tumour was composed largely of short spindle cells it had the appearance of a sarcoma, and owing to the relationship to the vessels it must have started from the perithelium. No remains of the pituitary body were seen, nor was colloid present,

Diagnosis. Perithelial angio-sarcoma of the pituitary body.

Sections through the optic chiasm showed that the optic nerves were in a state of extensive degeneration, the myelin sheaths being broken up and reduced to globular masses. The blood-vessels were distended and surrounding them were masses of small round cells.

Sections through the pons, medulla, left crus, and cord, showed nothing abnormal.

The symptoms in this case extended over a period of about twenty months, and were clearly indicative of a cerebral growth in the neighborhood of the optic chiasm. There were no symptoms whatever of acromegaly, myxœdema or pernicious anæmia. I would like, however, to call attention to two changes which have been frequently met in cases of tumours involving the pituitary body.

These are cirrhotic changes in the kidneys, uterus and ovaries. Boyce in his valuable paper on hypophysial growths gives details of at least four cases where the kidneys were found to be granular.

CASE II.

Endothelioma of the base of the brain—Causing pressure on the chiasma and obliterating the pituitary body—Symptoms of a cerebral growth extending over 9 years—Right temporal hemianopia—Profound anæmia—A general appearance not unlike that seen in myxœdema—No changes in the bony tissue.

Mr. W—, a merchant, aged 42, came first under the observation of Dr. Stirling in Feb. 1888, complaining of failing vision, headache and previously and this was I believe the first evidence of any intra-cranial trouble.

He had been for a number of years and up to the time of the appearance of his present complaints a heavy drinker. There was no history or evidence of tuberculosis or syphilis. He complained of a dull frontal headache but neither at this period or any time during the prolonged course of his illness, was headache a prominent symptom. In walking he more or less constantly had what he called a giddy sensation, with a tendency to fall forwards. Vomiting of a cerebral character was present for some months during the early period of the disease. Dr. Stirling's examination of the eyes revealed the following changes:

Left Eye. There is no perception of light. The pupil is semidilated and immobile, but reacts on stimulating the right eye with light.

Right Eye. Complete blindness to the outer side of the field. The inner side was amblyopic, vision being reduced to counting fingers at twelve feet. In reading type he is able to pick out a letter of the largest size (No. 16) here and there. In this area the perception of green was found to be very defective, and after looking at green for sometime there was an after image in pink.

Examination of the fundus revealed in the left eye white atrophy of the disc with somewhat contracted vessels. In the right eye the disc was simply pale.

There was no objective disturbance of either sensation or motion. He complained however of numbness in the hands. He had frequent flushings followed by profuse perspirations about the head and neck. The knee jerks were slightly exaggerated but the superficial and organic reflexes were normal.

The further course of this case was very slow, six years elapsing before his death in 1894. His sight entirely failed in August 1889. He became very fat and anæmic. The face and extremities were puffy, but in no part was there pitting on pressure. The puffy, pale skin presented a very striking clinical picture. The pallor of the skin was noticed when he first came under observation in 1888, but it steadily increased. In 1892, he presented the typical appearance of a person suffering from perni-

cious anæmia, the skin having a typical lemon-yellow tint, while the general state of nutrition appeared to be unusually good. In March 1893 Dr. Gunn examined the blood. He found 2,800,000 red cells and the proportion of white to red as 1 to 1500. The red cells were irregular in size, microcytes being abundant, no nucleated red cells were found. Four months later a second examination of the blood was made by Dr. Gunn. He found 2,100,000 red cells, and the proportion of white to red as 1 to 1600. The urine was free from both albumen and sugar.

The anæmia remained up to death but did not present any changes different from the last above recorded examination. His appetite remained good and was even at times voracious. He was annoyed with photopsiæ, and during the last two years of his life he complained more or less constantly of hallucinations of vision, smell, taste and hearing and of general sensibility. He often imagined that burglars were breaking into the house, maintaining that he not only heard but saw them. He kept a revolver under his pillow to punish any burglar that would attempt to come near him.

He frequently made mention of what he called "beasties" crawling over his skin and would stoutly maintain that he not only felt but saw them. This was when he had no perception of light in either eye. Although his general nutrition and strength were fair he spent almost the whole of his last year in bed. When urged to get up, he would make answer that he would do so the following day.

Summary of the symptoms and course :

1. Gradual loss of vision in both eyes, going on to total blindness in the left and temporal hemianopia in the right followed later on by total extinction of the perception of light.
2. There was complaint in the earlier months of his illness of frontal headache and of occasional vomiting.
3. The presence of more or less constant giddiness throughout the course of his disease with a tendency at first to fall forwards and afterwards to one side.
4. Profuse intermittent flushings and perspirations about the face and neck, but the skin of other parts was dry and harsh.
5. Slow cerebration, as evidenced by a slow drawing speech and slowness in answering questions. There was also great apathy and drowsiness and lowered temperature.
6. Hallucinations of sight, smell, hearing and of general sensibility.
7. A very pronounced lemon tint of the skin, resembling in this respect the appearances considered to be characteristic of pernicious anæmia. The blood changes corresponded also to those met with in pernicious anæmia.

8. (Edematous-like condition of the hands and feet, but no pitting on pressure.
9. During the last two years of his life, he kept his bed more or less constantly, taking little or no interest in anything but still able to talk and answers questions intelligently. He finally died in a state of coma.

Diagnosis. The general symptoms, headache, vomiting, vertigo and optic atrophy pointed clearly to a cerebral tumour, while the temporal hemianopia localized this to the optic chiasm. Had the visual disturbance been seen earlier it is highly probable the limitation of the field would have been met in both eyes. The absence of the pupillary reflex indicated that the lesion must have been situated between the left eye and the basal optic nuclei. Further, the optic atrophy showed that the lesion could not be further back than the basal nuclei, as in lesions of the optic radiations or cortex, white or essential atrophy is exceedingly rarely if ever visible at the optic disc. The slow growth of the tumour would account for the absence of the choked disc, time being sufficient to allow of the formation of lateral drainage or gradual distention of the sheath.

When the patient was first examined the obtunding of the nasal half of the light field, together with the defective perception of green, pointed to interference with the conduction of the remaining active portion of this nerve. There was a concentric and a fairly equal contraction of the field for white and colours pointing to a slow growth.

Prof. Adami, who performed the post mortem examination found a large cancerous tumour of the pituitary. The bone in the neighborhood was found greatly atrophied and the fossa greatly enlarged.

The growth was not perfectly symmetrical, it extended more to the left than the right side. The right olfactory was pushed to one side, while the growth infiltrated anteriorly above the left olfactory nerve. The thyroid gland was found to be normal.

The portion of the tumour examined was enclosed in a laminated fibrous tissue capsule,—the pia mater. The tumour was composed of rounded or oval masses of cells surrounded by loose connective tissue, the whole at first sight suggesting carcinoma simplex. On examining more closely however, it was seen that the cells did not conform to the carcinoma type. The walls of connective tissue which enclosed the cellular masses were lined with elongated and flattened cells, fusiform when viewed edgewise. At other places when the section was more oblique, these cells could be seen to be irregularly diamond-shaped with large clear oval nuclei—typical endothelial cells. The cells forming the cell-masses were various in shape, being generally elongated with bluntly oval nuclei, others however being irregular in outline with a more rounded nucleus. They had in places a curious tendency to form small whorls, and

in such cases the component cells were considerably flattened. The tumour was not specially vascular, nor did it show any tendency to degeneration. No pituitary structure was seen.

Diagnosis. Endothelioma.

The general symptoms of an intracranial growth, as headache, vomiting, vertigo, optic atrophy, were sufficiently pronounced to allow such a diagnosis and the locality of the growth was clearly indicated by the temporal hemianopia. An especial interest arises in connection with an explanation of the peculiar combination of symptoms, viz: a myxœdematous-like state and the pallor of the skin. How are these conditions to be explained? Have they any connection with the destruction of the pituitary body?

In a recent paper by Pechkranz of Warsaw (*Necrolog. Centblt. vol. 18, page 254*) on a case of sarcoma of the pituitary body, particular mention is made of a myxœdematous-like appearance that was a prominent feature. The author considers it identical with the pachyacria mollis of Arnold, a state in which the dystrophy is confined to the soft tissues in contradistinction to acromegaly to which he applies the term pachyacria ossea. In Pechkranz's case the bony tissues were found normal.

In a few cases of myxœdema changes have been met with in the pituitary body and instances are on record where both diseases have existed together. Dr. Anders (*in Nervous and Mental Diseases, Jan. 1892*) reports a case of hemorrhagic tumour of the pituitary body and infundibulum in a case of pernicious anæmia in a female, aged 34. The symptoms which developed after typhoid fever were giddiness, headache, nausea, slight loss of consciousness and delirium. I simply place this second case on record without the addition of any hypothesis as to a possible causal connection between the pituitary growth, the anæmia and myxœdematous-like state.

PNEUMONIA FOLLOWING ETHER.—REPORT OF A CASE.*

BY

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In spite of recent additions to the pharmacopœia of new drugs capable of producing general anæsthesia, chloroform and ether are still the ones in practical use to-day and the battle over the relative merits of each is as fiercely waged as ever. Both have their advantages and their disadvantages and during the administration of both, unfortunately, we must admit that deaths occur which are directly attributable to the agents themselves. Besides the immediate dangers attending the administration of an anæsthetic there are a number of after-effects or complications depending upon and caused by the action of the drug upon the various organs of the body, and these complications may occasionally be the cause of a fatal issue. Deaths occurring in this way are rightly to be looked upon as deaths due to the anæsthetic.

The complications following anæsthesia are for the most part inflammations produced by the irritant action of the anæsthetic agent; and the kidneys and lungs are the organs most commonly affected. Thus, it is noted that a certain proportion of cases of ether anæsthesia is followed by pneumonia, and to the disease found under these conditions the distinctive name of "ether pneumonia" has been given, and its clinical peculiarities have been described. Whether, however, a pneumonia following the administration of ether is to be regarded as due to the ether is open to discussion. It is the old question of *post hoc* or *propter hoc*.

Before, however, dealing with the arguments advanced on both sides of the question I will give the following brief report of a case which came under my notice last autumn. The case occurred in the service of Dr. F. A. Lockhart, in the Montreal General Hospital and to him and his House-Surgeon, Dr. R. M. Patterson, I am indebted for permission to publish the same. The report is condensed from the notes taken by Dr. Patterson.

M. R., female, aged 22 years, was admitted to the Montreal General Hospital on October 6th, 1898. She complained of "fits," profuse leucorrhœa, dysmenorrhœa, dull aching in the back, and pain in the right side of the abdomen.

* Read before the Montreal Medico-Chirurgical Society, April 11, 1899.

Personal History. The patient had never had any of the ordinary diseases of childhood and never suffered from any serious illness. She had always been an extremely nervous girl. Menstruation was established at the age of twelve and was regular every four weeks but was very profuse.

Present illness. Three years ago she began to have what she called "fainting spells" and which she described as follows. A peculiar feeling caused her to put her hand up to her face and then to perform various movements which she was unable to describe. About a minute later she became unconscious and remained so for a few minutes, the longest period ever noted being half an hour. She always knew when these attacks were coming on but had no definite aura. There was always time before unconsciousness supervened for her to reach a couch or something on which she could lie down. She stated that during an attack on one occasion she had passed urine involuntarily and several times had bit her tongue. The last attack was on September 24th at eight o'clock in the evening. Dysmenorrhœa and leucorrhœa had been present for four or five years the latter becoming much worse during the last three months. The last "period" began on October 2nd and lasted until October 6th, the day of admission to the Hospital.

Family History. All the members of the patient's family on both sides were noted for "nervousness." Her mother, who was an exceedingly delicate and nervous woman, died at the age of 49 from pneumonia.

Present Condition. The patient was a young woman in a fair state of nutrition but somewhat anæmic. Her extremities were habitually cold. Beyond a cough noted as "suspiciously hysterical" in character, nothing of importance was found in the physical examination of the various systems. The lungs were found normal and the heart sounds were loud and clear. There was a post-nasal catarrh with considerable mucopurulent secretion. The urine was free from albumin. A vaginal examination detected granular degeneration around the external os uteri and considerable tenderness in the right lateral fornix.

On October 10th the patient was anæsthetised with ether given by means of a Clover's inhaler, and the uterus was curetted and a gauze drain inserted. The following day at 10 a. m. the temperature rose suddenly to 101 2-5°F., the pulse to 136 and respirations to 24. The gauze was removed and found clean and free from odour. By 4 p. m. the temperature had reached 103 2-5°F. and the respirations 30, the pulse remaining about the same. An examination of the lungs revealed an area of dulness in the posterior part of the right lung at the level of the fifth or sixth dorsal spines. A small quantity of tenacious sputum

streaked with blood was coughed up. A diagnosis of lobar pneumonia was made.

On October 12th the dulness extended from the level of the spine of the scapula down to the ninth dorsal vertebra and well forward laterally to the posterior axillary line. Blowing breathing and bronchophony were present over the dull area. The patient was freely stimulated the pulse being continuously over 130.

October 13th. I saw the patient for the first time this morning and found the physical signs as already described. On the following day the 14th., the pneumonic process had involved the whole of the lower lobe of the right lung which it was possible to mark out very accurately by the boundaries of the dulness. An examination of the sputum showed the presence in considerable numbers of the diplococcus pneumoniae. From this out to the death of the patient, which occurred on the seventh day of the disease, the pulse and respirations gradually became more rapid and all efforts at keeping up the strength were futile. An autopsy was not allowed. The case resembled in every particular an ordinary lobar pneumonia. There was no chill but the disease was ushered in by severe pain in the side.

Clinically, we meet with two forms of pneumonia after etherisation, the lobar, of which my case is an example, and the lobular. The former, lobar or croupous pneumonia, is now admitted to be an infectious disease invariably due to the diplococcus pneumoniae and hence not due to the ether vapour, except in so far as the ether may be held to act as favouring the growth or invasion of the specific organism.

In discussing the relation of ether to lobar pneumonia we must bear in mind the following facts:—(1) Lobar pneumonia is an extremely common disease. (2) The recognised predisposing causes are those commonly met with in the class of cases requiring an anæsthetic. Among these, traumatism, exposure to cold, and debilitating influences may be mentioned. Is ether a debilitating influence? This is a difficult question to answer; but there seems no reason to doubt that where the ether narcosis is very much prolonged, the resisting power of the lungs is diminished *pari passu* with that of the rest of the body. This point is borne out, too, by the fact that ether pneumonia is relatively more common after gynaecological than after other operations as shown by statistics collected by Anders, of Philadelphia. The prolonged anæsthesia from the greater length of this class of operations and the consequent greater exposure to cold seems the most probable explanation, the general condition of the patient being on the average better than in any other class of cases in which surgical interference is called for. It would seem, then, that there is at most a very slight and indirect relationship between lobar pneumonia and ether anæsthesia.

Lobular or broncho-pneumonia, on the other hand, depending as it does upon an antecedent capillary bronchitis would appear to have a more direct connection with ether narcosis. Granted that the irritation of the ether vapour upon the mucous membrane of the bronchial tree is sufficient to set up a bronchitis or even to produce an abundance of secretion during the actual time of anæsthesia, the other steps in the process are easily understood. The supine position of the patient, commonly rigidly enforced after operation, and the endeavour on the patient's part to stifle all cough, especially in abdominal operations where pain would result from disturbance of the wounded surfaces, tends to allow of the collection of the secretions in the bases of the lungs and hence of the production of areas of broncho-pneumonia. Then, too, the frequency with which aspiration-pneumonia follows tracheotomies and operations upon the mouth, shows us that the drawing in of the buccal secretions through the larynx while its mucous membrane is rendered insensitive and incapable of setting up a warning cough, is a very real danger. We find, however, that this form of pneumonia is rare after ether as compared with the lobar form, the proportion of broncho to lobar pneumonia being as 19 to 7 in a series of 30 cases observed by Anders already alluded to. The frequency of bronchitis after ether seems to depend in great measure on the manner in which the ether is administered. Ether vapour in a concentrated form is a violent irritant, as is evidenced by the choking which invariably results at the beginning of an administration when the ether is given as pure as possible and the larynx has not had time to become partially anæsthetised. It is possible, however, with a little patience and the expenditure of a little more time, to produce full anæsthesia without causing any discomfort to the patient from the irritation of ether vapour. In what degree we are to regard ether as an irritant to the mucous membrane of the respiratory tract is a difficult question to decide. In my own experience, it is never necessary once full anæsthesia has been established, to keep up the strength of the vapour. One-third, or at most one-half, of the concentration required to produce anæsthesia will prolong it indefinitely and this degree of concentration does not cause any suffocative sensation in the average individual before the laryngeal reflex becomes deadened. Thus, with Clover's inhaler, full anæsthesia is usually produced by the time the indicator has reached the figure 2 upon the scale, a point which denotes that one-half of the total strength of vapour possible with this instrument has been reached. To maintain the effect it is then only necessary to keep the indicator at the figure 1 or to give the vapour in one-half the degree of concentration to which it was pushed at the start. Now I have found by experience that most people can breathe through

a Clover's inhaler with the indicator turned to this point without experiencing any sense of choking. One would expect, too, if the irritant effect was as great as many claim, that laryngitis would be a common sequel of ether narcosis, and yet we very rarely meet with it. It is indeed probable that the irritant effect of ether vapour upon the mucous membrane of the respiratory tract has been greatly over rated except in those cases in which it has been given in too concentrated a form.

Again, it has been claimed that a source of infection in these cases lies in the use of closed forms of inhalers, or of forms the parts of which cannot be properly sterilized after each administration. While there is no question but that all precautions of this nature should be faithfully carried out, there is little likelihood that this forms a practical source of danger, and for these reasons. Ether vapour is in itself an antiseptic. Sternberg has pointed out that tubercle bacilli are destroyed by an exposure of ten minutes to it, and a watery solution of chloroform in a strength of only one-half of one per cent., will kill almost immediately cholera, typhoid, and anthrax bacilli. It has been found also that pneumonia is just as frequent after anæsthesia in those institutions where the ether is administered on a sterilized towel as where the closed forms of inhalers are used.

With regard to the frequency of pneumonia after ether, the published statistics are for many reasons unreliable. W. H. Prescott, in 1895, collected statistics of 40,000 etherisations with only 3 pneumonias; Silk 5,000, with 13 pneumonias; and Anders, whose figures are probably the more nearly correct, 12,842 cases with 30 pneumonias, or .23 per cent. Anders' cases were taken from six Philadelphia hospitals,—public and private.

The question arises:—Is there a form of lobar pneumonia induced by ether anæsthesia which can be distinguished by its clinical peculiarities from primary lobar pneumonia? I think not. Pneumonia occurring in the course of any disease is more or less influenced by the disease to which it is secondary, and yet we do not speak of a Bright's pneumonia or of a typhoid pneumonia as a special form of disease. In the case reported, the characters were those of a typical lobar pneumonia going on to a fatal issue by hyperpyrexia and progressive loss of strength. Are we then to consider this case as in any way due to the etherization? Here, again, I think that the answer is: No. There is no evidence to show that the etherization was more than a preceding event. I think, however, that faulty or prolonged anæsthesia may in certain cases be a strong predisposing factor in the production of this form of pneumonia but that the vast majority of lobar pneumonias occurring after ether are in no way to be attributed to the anæsthetic.

With regard to broncho-pneumonia, however, I think that the converse holds true: i. e., that there is in most cases a direct relationship between the etherisation and the broncho-pneumonia,—the relationship of cause and effect. But here again faulty administration must be held largely responsible.

It remains, then, to discuss what means we must adopt to prevent as far as possible the occurrence of such a grave complication.

(1) Ether should not be administered, if possible, to patients with bronchitis, especially if there are physical signs pointing to considerable fluid secretion in the smaller bronchioles.

(2) In every ether administration care should be taken to produce as little of the irritant effects of the vapour as possible, especially at the beginning of the administration. This can be accomplished by graduating the amount of ether vapour the patient is allowed to breathe—commencing with a minimum amount and increasing it as tolerance is established. When this method is faithfully carried out, the relatively small number of cases in which there is a copious secretion of mucous suggests the idea that it is possible to gradually anæsthetise the mucous membrane so that the ether either does not act, or soon ceases to act as an irritant to its glands.

(3) Where cases occur in which in spite of these precautions the mucous is poured out in considerable quantities, it should not be allowed to collect in the back of the throat but should be swabbed out by means of a sponge or a gauze pad. In practice, I have found it of advantage in troublesome cases of this kind to allow the anæsthesia to become less deep and then to induce vomiting. The act of vomiting empties the mouth, and to a certain extent the lungs, as well as the stomach.

(4) During the occurrence of vomiting the patient's head, and if possible the body, should be turned on the side, so as to allow the vomited matter to flow out of the mouth. There is very little danger of the vomited matter getting into the larynx during the act of vomiting. The anæsthesia is not very profound, the glottis is kept closed reflexly, and no attempts at inspiration are made. It is after the vomiting has ceased, and the anæsthesia again become profound that little particles of food remaining in the mouth may be drawn into the larynx and lungs.

(5) Finally, etherization should not be prolonged unnecessarily, and in every case the smallest amount of ether compatible with the production of full anæsthesia should be given.

Case Reports.

TWO CASES OF SEPTIC INFECTION SUCCESSFULLY TREATED BY ANTISTREPTOCOCCIC SERUM.

BY

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At the present time, when the value of antistreptococcic serum and the class of cases in which it should be employed, are being discussed, the following report of the successful treatment of two severe cases of sepsis by this means will be found of interest.

Case I. During the summer of 1897, Dr. S. with his wife and baby, a healthy child of ten months, was staying with friends at a summer cottage on one of the islands of Stony Lake. A number of dogs owned by the party frequently played with the baby. On August 3rd, the doctor noticed a scratch on the calf of the child's leg, and, upon examination and enquiry, came to the conclusion that it had been made by a dog's claw. In the light of subsequent events this was probably correct, and indicated the means by which septic material had been introduced, the dog probably having been eating or digging up some carrion.

Nothing further was noticed until twenty-four hours later when the child became feverish and chilly, and the leg about the scratch inflamed and angry-looking. These symptoms naturally alarmed the father who feared that the condition might be due to poisoning in the way indicated. Calomel and soda were administered and a free evacuation of the bowels obtained but without much benefit, as the alarming symptoms became worse during the night and on the morning of August 4th, (the following day) the child was unconscious and had a temperature of $105\frac{1}{2}^{\circ}\text{F}$. Dr. S. brought the child to town, and when I saw it at 10.30 a.m., the following condition was noted:—

Temperature $105\frac{1}{2}^{\circ}\text{F}$.; pulse very rapid; the face was of an ashen-gray colour with a dusky red flush on the cheeks. Over the whole body there was present that peculiar general tremulous condition,—a constant vibratory movement of the entire system involving even the eye-balls in oscillations,—which showed the profound impression made by the septic poisoning. The child was overwhelmed by toxæmia and seemed to be in imminent danger of convulsions, coma, and death. The spot on the calf of the leg presented an oval swelling about two by three

inches in size, having in its centre the angry, inflamed, scratch, and irregularly discoloured by bluish purple and dusky red patches.

As soon as possible, which was at 12 noon, 6 cc. of antistreptococcic serum was injected in the lumbar region and a cold lotion was applied to the leg. The child was also given sustaining nourishment and soothing internal treatment.

At 12 o'clock at night the temperature had fallen a little,— $104\frac{1}{2}^{\circ}\text{F.}$,—and 7 cc. of the serum was again administered. On the morning of the 6th, the temperature was 104°F. ; the general symptoms were somewhat relieved; and the danger was considered somewhat less imminent. During the day the child continued to improve. The discolouration of the leg had increased and extended from half way up the thigh to the ankle.

On August 7th, the condition was still further improved. The temperature was 101°F. and the child was quite conscious. The local symptoms subsided, the discolouration disappearing except at the original spot where an abscess formed which was opened at the end of the week and curetted, washed, packed, and dressed daily until well.

A short time before this case occurred I had read the report of a case treated with antistreptococcic serum by Dr. Bowie of Brockville with remarkably good results, and was so impressed by it that I had instructed a druggist to send to Messrs. Parke, Davies & Co, for a supply, in order that I might try it if suitable opportunity presented. When Dr. S. brought his child I telephoned the druggist to know if the serum had arrived, and the answer was 'Yes'. It had just arrived by morning train, a most providential thing, for there can be little doubt it was the means of saving this child, and if there had been a delay of twenty-four hours in procuring it, in all probability it would have been too late.

Case II. On December 17, 1897, I saw in consultation, R. J. McCl., aged 32, Canadian. Seven weeks previous to my visit the patient while chopping in the woods had cut his right knee with an axe. The cut was in a longitudinal direction to the inner side of the patella, the deepest part being over the inner tuberosity of the tibia. It had penetrated the bone to some extent. The house in which the patient was living at my visit was a small log one consisting of a kitchen, which also served as a general living room, and two small bedrooms, one of which was occupied by the patient.

On examination, the patient was seen to be a large-boned man, thin, anæmic, and suffering great pain with evening exacerbations. There was a septic type of temperature,—chills and high fever followed by profuse sweating,—a rapid pulse, and great and increasing prostration. The leg from above the middle of the thigh to the ends of the toes was enormously swollen and fluctuation was made out over the thigh and leg. The

wound presented an unhealthy appearance with swollen and gaping edges and was discharging a little pus on the poultices which were being applied to the whole leg.

Here was a patient, in the condition and with the surroundings described, suffering from the effects of a wound which had become infected and was followed by an osteo-periostitis with large dissecting abscesses and general septic infection. He was in the country fifteen or sixteen miles from a hospital, and without the means of securing skilled nursing. There was no way of improving the surroundings so as to make the treatment such as would give any hope of a successful issue, and the prognosis was consequently gloomy. If the patient remained where he was a fatal termination was certain. If he could be removed to a hospital, there was the possibility of saving his life, but no hope of saving his leg. The friends could not make up their minds what to do and the patient seemed to depend on their decision. Snow, however, having fallen during the day and night, they, urged by the attending physician, placed the patient on a sleigh and brought him to the Nicholl's Hospital on Saturday, December 18th. He arrived in a very weak and exhausted condition and his temperature that evening at 8 o'clock was 103.4-5 F.

On Sunday morning, December 19th, the patient, fortified by stimulants and strychnine hypodermically, was anæsthetised, and large incisions were made in the inside and outside of the lower part of the thigh and in the calf of the leg. The discharge of pus, clots, and shreds of tissue was very great,—literally quarts. The abscesses were thoroughly washed out, cleansed, and lightly packed with iodoform gauze, and dressings and bandages applied. The patient, as was expected, was in a very weak condition, so normal saline solution was suffused into the median basilic vein and he was then removed to bed. As he remained very weak, the intravenous saline injection was repeated in the other arm. Through the night a little milk, brandy, and lime-water was administered and strychnine injections were given hypodermically.

On December 20th and for some days following, the condition was precarious; however, as time went on, he was able to take nourishment better and it was well retained. It consisted of bovine milk, raw eggs, whiskey, etc. The abscesses were dressed daily, irrigated with saline solution, hydrogen peroxide, and again with saline and packing and dressings freshly applied. The temperature varied from 96°-102°F.

On December 21st, a syringe-full (11 cc.) of antistreptococcic serum was injected into the lumbar region and this was repeated on December 22nd. This was all the serum on hand at the time. An ounce of it was obtained and injected in the same quantities, i. e., 11 cc. at a time, on the 25th, 27th, and 29th, of December. These injections had apparently little effect, the temperature ranging from 99°F. a. m. to 101½°

F. p. m. The patient's general condition was not improved. He was delirious a good deal of the time and very restless, the pulse running from 90 to 120. Morphine had to be given hypodermically to relieve pain and procure sleep.

From January 1st to 5th, the patient's condition was even worse. There was greater prostration, more delirium, and occasional involuntary evacuations of urine and feces. The temperature at this time ranged from 97°—102 2-5°F., and the pulse, which was weak and variable, from 80—132. Secondary abscesses formed, one on the front of the left thigh eight inches long but superficial in the cellular tissue, and one on the left forearm about half that size. They were opened early, curetted, irrigated, packed, and dressed daily.

Antistreptococcic serum was injected on the 5th, 6th, and 7th, 11 cc. each time and from now on we had a marked change for the better. The highest temperature reached on the 5th, was 102°F., on the 6th, 100°F., on the 7th, 100°F., and on the 8th, 99 4-5°F. From this time on the temperature was practically normal, reaching 99 4-5°F. on only two evenings.

The night report for January 5th. was that the patient slept and took nourishment fairly well, had very little delirium, and an involuntary stool (the last). On the night of the 8th there was a good deal of delirium, pain, and restlessness, requiring morphine hypodermically. On the 10th took nourishment well and slept two hours; on the 11th, quieter; on the 12th, took nourishment and slept fairly well. The improvement noted, continued.

A saving feature of this case was that food was so well taken and in such large quantities. Solids were allowed just as soon as the stomach would tolerate them, and bovine, milk, and raw eggs, continued. Necessarily the improvement was slow but steady and satisfactory, and the strength and weight gradually returned.

The patient was discharged on May 9th with the abscesses all healed and a bony ankylosis of the knee-joint. He could walk well with crutches. As there was not any hope of the leg ever being of use, he was advised to go home, keep in the open air, as much as possible, and when strength was fully restored, to return for amputation. This he was obliged to do sooner than expected, as he had the misfortune to fall from one of his crutches and receive an injury to his bad knee. He returned to the hospital on June 14th, and on June 27th the leg was amputated at the lower third of the thigh. He made a good recovery and was discharged on August 15th.

In this case the first injections exhausted the supply of serum on hand. Then an ounce was procured and given in three injections with slight,

if any, result, and again an ounce in three injections with the marked satisfactory results reported.

The patient's condition of great prostration marked by delirium, involuntary evacuations, chills, fever, and perspirations, was such as to suggest the hopelessness of the case without some means which would change the condition of the blood. Antistreptococcic serum proved its power of antidoting the toxic materials which were fast overwhelming the vital forces of the patient, when other remedial measures were powerless to stay his downward course.

A CASE OF ECTOPIC GESTATION—RUPTURE—HEMORRHAGE OPERATION—RECOVERY.

BY

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At 4 p. m., March 11th, I saw the patient, Mrs. S., who was a strong, full-blooded woman, aged 29 years, and had been 18 months married.

Four months previously, she had given birth to a full term child, which she was nursing. She had menstruated regularly after the first month until six weeks before the present illness, when the menses did not come on as usual, and she had some nausea in the morning. She was again menstruating (slightly) when I saw her, thought she had increased in abdominal girth during the past month.

Present illness.—She was reaching up hanging clothes on a line, when she was suddenly seized with a very severe pain across the lower zone of the abdomen, followed by a faint feeling and persistent vomiting. About an hour before I saw her, Dr. W. Smyth, the nearest physician was called in, and found her in a state of collapse, going from one faint into another and much blanched. He gave stychnia hypodermically, which improved her pulse. He thought her condition might be due to some acute intestinal obstruction. She had three loose, watery stools inside two hours. She had previously taken mustard and water as an emetic, thinking the colicky pain might be due to canned tomatoes eaten the previous evening, although she had been feeling perfectly well before the sudden attack in the forenoon. As I first saw her she presented a typical picture of collapse from hæmorrhage. There was pain on pressure over the left iliac region, no marked abdominal distention, though there was dulness on percussion in both flanks; pulse, 130, small and compressible; temperature, 97°F. I diagnosed a ruptured ectopic gestation, probably left sided.—and advised immediate operation; but as her friends demurred somewhat and as my *coûtrière* thought her condition better than when he had first seen her, we decided to apply an ice bag to the abdomen, give cracked ice by mouth, and wait for a couple of hours. On returning, we found the general condition of the patient worse, though vomiting had ceased, and advised immediate operation, to which she and her friends consented.

The ambulance was sent for, and before her departure for hospital, a hypodermic of morph. sulph. grain $\frac{1}{4}$ with atropia sulph. grain

1-120, was given. I mention this because it afterwards gave us a beautiful instance of the "masking" effect of opium on hæmorrhage. When she reached the Montreal General Hospital at 7.45, she did not look like the same patient I had left at 6 o'clock. Her face was flushed, and were it not for the rapid pulse, her appearance presented none of the typical symptoms of hæmorrhage. In fact, she and her friends thought her condition so much improved that they hoped an operation might be averted. My senior colleague, Dr. Armstrong, who had kindly consented to assist me, saw the patient with me, and concurred in my diagnosis and advice to the patient. A bimanual examination under ether showed the uterus somewhat larger than normal, the cervix soft, and the os patulous. There appeared to be rather more fullness in the left broad ligament than in the right, but no distinct mass could be felt.

On opening the abdominal cavity, blood welled out profusely, and I at once plunged in my hand and secured the left Fallopian tube and ligament, which I clamped near the uterus. This stopped the hæmorrhage, and after removing several clots, we got the dilated tube into view, the small foetal sac presenting at the enlarged fimbriated extremity, through which, during manipulation of the tube, it delivered itself. Conception had taken place about midway along the tube. The left tube and ovary were tied off in the usual way, the abdomen thoroughly washed free from blood clots,—a somewhat tedious procedure,—and after examining the other tube and ovary, which were normal, I proceeded to close the median abdominal incision. Before doing so, at Dr. Armstrong's suggestion, I filled the abdominal cavity with warm normal saline solution, with the result that the patient's pulse, which had been stimulated by subcutaneous saline injections during operation, markedly improved, and the patient never suffered from that great thirst which so often follows laparotomy.

Before operation the patient's pulse was 120, and temperature was 100 2-5°F.; one hour after, her pulse was 112, and temperature 99 4-5°F. On the fourth day after operation, her temperature reached 102.3°F. from some undiscoverable cause, but she slept and ate well and complained of nothing but a feeling of faintness if left more than two hours without food, during the first few days. The rapidity with which she made blood and recovered strength was remarkable. On the fifth day, after having small doses of saline by mouth, she had several copious, watery stools, and the temperature fell to normal, pulse to 93.

Pathologist's Report.

"The specimen shows a large mass of clot, attached to which is a villous mass with typical chorionic papillæ. The ovum is not attached; tube thin and dilated, fimbriated extremity free. Along the attached

border is a depressed injected area, and here it appears puckered as if from the healing of a laceration or ulcer, but no signs of perforation exist at present. In slitting the tube, this corresponds to a sacular dilatation close to the broad ligament, $\frac{3}{4}$ inch in diameter, admitting readily the tip of the thumb. The inner wall is lined with fibrous exudate. Diameter at this point is $2\frac{1}{2}$ inches, at the fimbriated extremity $1\frac{1}{2}$ inches. The distance from nearest point to the sacculation is 1 inch. The ovary is firm and shows a large corpus luteum, ($\frac{1}{8}$ inch), with firm yellow wall, and in the centre a clear cystic space $\frac{1}{2}$ inch in diameter."

The hæmorrhage was undoubtedly due to a complete or partial detachment of the foetal structure from the inside of the tube, and the missing ovum was doubtless washed out into the abdomen by the first gush of blood, and lost in some of the many blood clots which filled the abdominal cavity.

The unusual feature of this case lies in the fact of its occurring within four months of delivery, and during lactation. With one slight interval, too, the patient had menstruated regularly, and was menstruating at the time of the present illness and operation.

Her after history has been without interest, the wound healed by first intention, and she was conveyed to her home in the ambulance on the 14th day after operation, and gained strength steadily, and at present writing is performing her usual household duties.

FOREIGN BODY IN THE NASO-PHARYNX FOR EIGHTEEN YEARS.

BY

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Two years ago, a young woman, 23 years of age, consulted me in reference to a profuse muco-purulent discharge from both nostrils requiring her to use from six to eight handkerchiefs a day and giving rise to a very disagreeable odour. The odour was so characteristic of a foreign body, that I at once asked her if she had ever introduced anything into her nose, and received the following history:—

When five years old she was asked by her mother to bring a thimble to her and carried it by putting it in her mouth. On her way up stairs the child was seized with a violent fit of coughing, which suddenly ceased on her being thumped on the back. One year later she developed what was called a “catarrh of the nose.”

On examination from in front, both nostrils were found filled with muco-purulent discharge; the voice was nasal and resembled that of a person suffering from paralysis of the soft palate. Post-nasal examination revealed a black mass lying close up to the septum and covered with a muco-purulent discharge and giving a grating sensation on being touched with a probe. Efforts at removing it with the finger were ineffectual. Under an anæsthetic the foreign body was removed and proved to be an ordinary tailor's thimble incrustated with concretions, the surface of the thimble being found to be perfectly smooth, all the usual roughness being obliterated. The thimble lay with its broad surface in the transverse diameter of the pharynx and close up to the mouth of the left Eustachian tube.

Besides the symptoms already mentioned there were noises in the ears and diminution of hearing, both of which were relieved by the removal of the thimble.

The subsequent treatment consisted in the use of an antiseptic cleansing solution and of Politzer's air-bag.

It is an interesting fact that the naso-pharynx can tolerate a foreign substance like this for so long a time without doing more damage. The case stands alone in the literature of foreign bodies in the naso-pharynx. A recent examination of the patient proved the absence of any “catarrhal symptoms” and the restoration of the voice to its proper tone and of the hearing to a normal degree.

CLINICAL NOTE
ON THE SO-CALLED STRUMOUS OR PHLYCTENULAR
KERATITIS.

BY

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The out-patient practice of our hospitals affords an opportunity for studying groups of cases that cannot well be obtained in any other way, and the knowledge gained by this kind of study is always more impressive and thorough than any other system of teaching can impart. It is for instance, a startling discovery for the student of ophthalmology to make, when he finds in the course of a few weeks a number of young adults handicapped in the work of earning a living by defective vision which cannot be improved by optical or any other means, always coming with the same history and similar visual defect, though varying in degree. The salient features in this group of cases are a history of a prolonged period of inflammation or repeated attacks of inflammation of the eyes in early childhood. All this has long since passed away but the corneæ, clear or somewhat nebulous to ordinary inspection, show distinct and unalterable opacity of the pupillary are when examined by focal illumination.

Coincidentally with this observation the student will observe a number of young children presenting the very same troubles the others have described as things of the past. The salient features here are inflammation of the eyes, better at times but frequently recurring for past months or years and always characterised during the acute attacks by inability to bear the light of day, that is, photophobia (more or less intense) by lachrymation and other signs of strumous keratitis.

Is the fate of this group to be the same as that of the first ? Most assuredly it is, unless some means can be found to promptly cure and to prevent recurrence of the corneal ulceration, which was the origin of the permanent opacities. This, then, is the problem to be solved.

Granting that the designation "strumous keratitis" is well chosen, it must still be admitted that many children known to be of the strumous diathesis do not suffer from this particular form of eye disease. It is also certain that the most approved treatment of this diathesis rarely suffices to prevent the recurrence of the corneal disease and is, together

with the most skillful local treatment of the eyes, often of only temporary benefit.

A careful study of this group shows that they all, or nearly all, suffer from naso-pharyngeal catarrh, with hyperplasia of the tissues in the vault of the pharynx, lesions which tend to disappear with adolescence, the very time when recurrences of strumous keratitis tend to cease. Does not the one fact explain the other? There is abundant evidence accumulating every day to show that it does. Restore the naso-pharynx to a state of health and the chances are the corneal disease will disappear permanently.

The two following cases taken from the Royal Victoria Hospital case-books may serve as illustrations of the principle just stated.

H. F. V., *et.* 3½ years, has been unable to open the eyes excepting in a very dim light for the past six months and has apparently derived no benefit from local or constitutional treatment. The right cornea presents a broad vascularised ulcer at the outer margin. There is nasal catarrh and a considerable mass of soft vegetations in the vault of the pharynx.

Treatment:—Galvano-cautery of the ulcer and removal of the pharyngeal growths, followed by a solution of atropin and mercury perchloride for the eye and a mild antiseptic spray for the nasal catarrh, perfectly cured in 15 days.

H. R., *et.* 3 years, eyes inflamed almost all the time during past twelve months. Left cornea shows a small ulcer with larger gray infiltration, nearly central, becoming vascularised. Other conditions similar to H. F. V.

Treatment the same, except that the cautery was only used very lightly. Discharged from hospital cured in 10 days.

These two cases, of recent occurrence, are only given as illustrations of the rapid way in which existing lesions may be cured by suitable treatment. Dozens of similar cases managed in the same way in past years have shown that the cure is usually permanent.

Every such case means the rescue of one individual from a lifelong affliction.

AN OBSCURE COMPLICATION OF VARICOCELE *

BY

W. H. SMYTH, M. D.,

On December 4th, 1898, I was called to see F. F., aged 25 years, a fourth year medical student, and found him suffering from a very severe pain in the right side of the scrotum. The history given, was that he had had a moderately large varicocele on that side for a number of years, but had not been greatly inconvenienced thereby.

On the date of the illness, he arose at 9 a. m., breakfasted at 9.30, had a movement of the bowels at 11.15 with no straining and nothing abnormal noticed, immediately after which he took a hot bath and, while drying the scrotum carelessly with a towel, noticed a slight tenderness on the right side and on examining found a nodule in the scrotum just above the testicle, about the size of a couple of pecan nuts and shaped like a knuckle. There was no pain in the inguinal canal or rings and the right side of the scrotum was retracted. He then dressed, and noticing that on walking it became more painful, he lay down.

At about 1.15 p. m., the pain became very much worse so he went to bed and then felt slightly nauseated but did not vomit. He felt a severe dragging pain extending up into the inguinal canal and intense tenderness over the swelling in the scrotum but no tenderness over the inguinal canal. Turpentine stupes were applied but with no relief.

I saw the patient at 2.15 p. m., and found him in agonising pain and lying in the dorsal position with the knees drawn up. Morphia, $\frac{1}{2}$ grain, was given hypodermically. On examination, the testicle was found normal and not painful on handling. The epididymis was also normal but above and behind the testicle was a tense nodular mass which through the scrotum appeared of a dark blue colour. It was bent on itself like a knuckle and the angle appeared more tense than the remainder. It was quite separate and distinct, and could be moved away from the testicle. There was no enlargement in the inguinal ring and the swelling did not reach within an inch of the external ring, nor was there any tenderness in the external ring or canal. There was no impulse on coughing in either the ring, canal, or the mass in the scrotum. The cord coming over the pubic bone was exactly of the same size and consistence as on the other side. The spermatic artery could be felt pulsating in the part of the cord but could not be traced in the midst of the mass.

The vas deferens was also easily felt coming over the pubic ramus in

the cord, and three-quarters of an inch below the ramus it separated from the cord and passed off to the epididymis, which was quite distinctly separate from the mass. In following the spermatic vein down from the pubes it suddenly became tense about one inch below it and then merged into the nodules two in number, the first in the course of the vein being the larger, and both assuming the position and shape of two pecan nuts joined at an angle, the lower being folded back on the upper. These did not give the impression of being composed of numerous veins but of one distended vein with a constriction. There was nothing to be felt in the ring or canal, and the external ring was normal in size.

As the patient was suffering agonising pain and could not bear manipulation, Dr. Bazin was called in and the patient put under chloroform. Manipulation was then tried for a short time but produced no effect, so aspiration was performed by an ordinary hypodermic syringe and about fifteen minims of very dark blood was obtained, but it did not effect the tension appreciably. It was not possible to aspirate a larger quantity although numerous punctures were made in the mass.

It was then decided to make an incision and the ambulance of the Montreal General Hospital was summoned and on its arrival the house-surgeon in charge made a superficial examination and found the condition as described. During the trip to the hospital the patient felt a sudden relief from the excruciating pain which had persisted in spite of the morphia. On arrival at the hospital in something less than half an hour he was placed on the table and an examination made by Dr. Armstrong and Dr. Elder, when the tenseness of the veins was found to have entirely disappeared. A small soft nodule in the upper part of the scrotum alone remained and this was tender to touch in all probability from the punctures produced by the hypodermic needle. There was nothing in the canal or rings, but on passing the finger downwards over the scrotum the blood could be seen coursing and slightly distending a large vein about $\frac{3}{4}$ of an inch broad. The patient now had a slight attack of nausea and vomited once. Attention was now directed to the abdomen and a small nodule was felt in the abdominal wall one inch above and one and a-half inches internal to the internal ring, and I must acknowledge that I did not recognise this when making the examination at the patient's residence. This mass varied in size, was not tender, and gave no impulse on coughing. It was thought that it might be a Littré hernia, and Drs. Armstrong and Elder on consultation, advised an exploratory incision and the patient was accordingly anaesthetised and an incision made over the nodule in the abdominal wall but nothing abnormal was discovered. The internal ring was examined and found normal, the veins

of the canal were somewhat large but not dilated. Nothing being found, the incision was closed and the patient placed in bed with lead lotion to the scrotum. He made an uninterrupted recovery, leaving the hospital on December 18th., not feeling any pain but having a tenderness still at the original point and another at the lower end of the incision.

As to the diagnosis of the above condition; it seems to me to lie between (1) Testicular pain. (2) Referred pain from a hernia. (3) Pain from an intense venous distension.

(1) *Testicular pain.* In this case the pain was not felt in the testicle but was above and behind; and besides the testicle could be handled and pressed without any inconvenience to the patient.

(2) *Referred pain from a hernia.* This may be excluded from the fact that no hernia was discovered by the incision and that the external rings were quite normal.

(3) The only decision, then, to which I can come is that the pain was caused by an intense venous distention and that it was caused by a strangulation of one vein by another by a loop of it being caught by another or else by a vein being twisted and thus causing the distention. Another explanation might be that it was caused by a thrombus.

I consider that it was probably caused by one vein constricting another and that the jolting of the ambulance on the way to the hospital set it free and brought immediate relief to the patient. I have been unable to discover any reference to a similar case in the literature and would ask if anyone present this evening has ever met with a similar condition to which Dr. Bazin and myself have given the name "strangulated varicocele."

RETROSPECT OF CURRENT LITERATURE.

Medicine.

UNDER THE CHARGE OF JAMES STEWART.

Malignant Endocarditis.

FRANCIS HARBITZ. "Studien ueber Endocarditis." *Deut. Med. Woch.*, 1899, No. 8.

During the past four years Harbitz has examined all the cases of endocarditis coming to section in the Pathological Institute at Christiania. Two main groups may be distinguished by an etiological classification.

(1) Infectious endocarditis, comprising several subdivisions according to the micro-organism present, such as streptococci, staphylococci, gonococci, etc.

(2) Non-infectious endocarditis including cases whose specific infective origin is still unknown. It seems probable that further research may place a number of these cases in the first class.

(1) Of 43 cases belonging to the first group, 17 were induced by streptococci, 5 by pneumococci, 8 by staphylococci, and 3 by other micro-organisms. In each case cultures, cover-glass preparations, sections of the affected parts, and experiments on animals were made. Both the clinical and pathological features in these cases presented such differences that they may be subdivided as follows:—

(a) Cases of acute endocarditis, usually arising from some purulent focus, running a rapidly fatal course with pyæmic symptoms. At autopsy there is usually found a diphtheritic deposit on the valves with ulceration and necrosis, and even abscess formation in the heart muscle at the base of the valves. There are also, as a rule, multiple abscesses of the skin, the spleen, the kidney, and the eye. These cases are usually due to staphylococci and correspond to the well-recognised and classical picture of acute ulcerative endocarditis.

(b) Another group consists in cases where the endocardial changes predominate, and form the primary focus from which the other organs are infected. These cases are mostly due to staphylococcus or pneumococcus infections.

Clinically, the long duration of these cases is remarkable, often lasting for 4, 5, 6, 8, or even 10 months. The symptoms set in gradually often with rheumatic pains, general malaise, slight fever, and later cardiac symptoms such as palpitation, dyspnoea, cough, hæmorrhages in various sites, cyanosis and œdema. The temperature, often trifling, is sometimes high or intermitting, and when accompanied by joint swelling closely resembles acute rheumatism. Rapidly increasing anæmia and emaciation are sometimes the most pronounced features, whilst the renal symptoms are at times so severe as to lead to a diagnosis of acute hæmorrhagic or parenchymatous nephritis.

Anatomically the valves present numerous small verrucose with larger and irregular excrescences, often ragged and polypoid in character. Their infectious character is often indicated by their localization on corresponding portions of two valves. The excrescences are usually moderately consistent and adherent; they are occasionally partly infiltrated with lime salts, and ulceration is usually absent. Microscopically the excrescences are composed chiefly of fibrillary connective tissue, with few nuclei and more or less thrombotic deposit. Valvular aneurisms and thickened or ruptured cordæ tendinæ, are also sometimes present. The whole process is marked by chronicity and a tendency toward healing, with an absence of destructive changes such as ulceration and abscess formation.

Secondary suppurative foci are remarkable by their absence. The usual infarcts in spleen or kidneys and also cerebral emboli do not suppurate and are usually sterile, although an enormous number of micro-organisms are found in the valvular vegetations. The spleen is usually enlarged and firm. The kidneys vary considerably in appearance being sometimes normal, at other times almost like the cyanotic kidney, or again, soft and swollen with punctiform hæmorrhages.

Of 16 cases falling in this class, 9 were due to streptococci, 4 to pneumococci, and 2 to organisms resembling but not positively identified as gonococci. Although acute cases of endocarditis with pyæmic symptoms and abscess formation are sometimes due to streptococci and pneumococci, the author believes that the staphylococci are frequently responsible for such fulminating forms. The more chronic and benign forms now under discussion he regards as usually due to streptococci and pneumococci. Between the two groups of cases, the acute and chronic, are numerous intermediate types forming a gradation both in clinical symptoms and in pathological appearances.

Two cases illustrating the features above referred to, are recorded, both due to streptococci and having a duration of five and two months respectively.

Closely related to this chronic infectious endocarditis is a form in

which micro-organisms are absent. Of ten cases examined the pathological characters were similar to the cases just described; their course was chronic and there was frequently a subacute nephritis. It seems probable that in these cases the micro-organisms have disappeared, and this view is born out by the fact that they have occasionally been found in the blood some time before death, and although cultures from the valves remain sterile, yet the appearances are such as to suggest previous foci of micrococci. It would thus seem probable, as indeed has been stated by Leyden, that some cases of infectious endocarditis may terminate in recovery, leaving more or less severe valvular lesions.

If the writer's views in referring many of the milder and more chronic forms of infectious endocarditis to streptococcus infection are confirmed, it will encourage the further use of antistreptococcic serum. This remedy is credited with good results in a few instances, and may prove efficacious in favouring the tendency to repair and recovery.

(II) Non infectious endocarditis or endocarditis whose specific virus is not yet discovered.

Six cases of rheumatic endocarditis, varying in duration from 4 to 10 weeks, all proved sterile. In all the cases the macroscopic appearances were similar presenting verrucose excrescences on the borders of the valves, along the lines of contact. Other observers have, however, found micro-organisms in such cases, so that further work is required to establish the origin of these forms. In nine cases of tuberculosis,—7 of which were of the verrucose variety,—and 2 of polypoid excrescences, no organisms were discovered by cultures. In one instance a small collection of tubercle bacilli was found in a coverglass preparation, and in another inoculations of portions of the valve caused death in two guinea pigs from tuberculosis. The writer regards it as very doubtful whether the endocarditis is due to tubercle bacilli, and considers the pyogenic organisms found in ulcerating phthisis as a more likely cause. In certain other chronic diseases, especially morbus Brightii and carcinoma occasionally verrucose excrescences are found. The writer failed to find bacteria, but regards it as an open question whether they are due to infection by bacteria or to the chemical action of abnormal metabolism.

THAYER and LAZEAR. "Gonorrhœal Septicæmia and Ulcerative Endocarditis." *Journal of Experimental Medicine* Vol. IV, I.

Thayer and Lazear publish a fresh case of malignant endocarditis due to gonorrhœal infection and recall the case published by Thayer and Blumer several years ago. In their last case, the patient began to suffer from chilly sensations, fever, and general weakness, several weeks after the onset of an acute gonorrhœa. Violent rigors ensued, disappearing under treatment. Marked anæmia, œdema, swelling and fluctuation of

the left knee joint, splenic tumour, hepatic enlargement, and albuminuria were noticed. Cardiac dilatation and an apex murmur developed towards the end, and still later, pericardial friction and a petechial rash. The blood examined during life showed the presence of gonococci.

The autopsy showed an ulcerative and vegetative endocarditis of the tricuspid valve, (of which an excellent plate is given), splenic tumour, passive congestion of the liver, subacute hæmorrhagic and glomerular nephritis, acute sero-purulent pleurisy, pericarditis due to the gonococci and pulmonary infarct. Dense masses of gonococci were also found in the tricuspid valves.

The two cases recorded are the first instances in which absolute proof of the gonococcal nature of the general infection has been obtained. A table of other cases of gonococcal endocarditis is appended. This paper is by far the most valuable yet published on the subject, and will repay careful perusal.

F. G. Finley.

Surgery.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

The Galvanic Current in the Treatment of False Ankylosis.

GWYER. "Observations on the Use of the Galvanic Current in the Treatment of False Ankylosis." *Annals of Surgery*, May, 1899.

Dr. Gwyer is in a position to speak with authority on this method of treatment as he has studied the subject for years, contributing an article to the *Annals of Surgery*, in 1893, and another to the *New York Medical Journal*, in 1895, on the use of galvanism in ankylosis.

He finds the greatest benefit from its use in cases of false ankylosis due to traumatism. He now uses the ordinary Leclanche cell of Vale type. He believes the action of electricity in the class of cases under consideration to be two-fold. First, the electrolytic action. That such dissolving action will take place is, he thinks, undoubted; but it is necessary that the material to be acted on be unorganised, for the amount of current which can be used must be limited to that which will not disintegrate and destroy living tissue, hence one cannot expect action except in the presence of unorganised tissue. It will act until the period of round-celled infiltration is reached, but not after.

The other method is by the heat developed because of the resistance of the tissue to the passage of the current. This resistance varies with the tissues and cannot be estimated very well in ohms; but clinically it is considerable, and is manifested by the sensation of heat which the patient experiences and the reddening of the skin more or less pronounced, and which may be, with enough current, carried to vesication and even to a considerable burn. The heat which is generated immediately upon application of the current extends throughout all the tissue located between the electrodes. The heat so developed increases the quantity and rapidity of the flow of blood both to and from the part, and so, through the dilated lymph channels and veins, carries away and into the general system, and so, to elimination, the disintegrated and liquefied exudate.

Dr. Gwyer believes galvanism to be superior to hot air and free from the danger of the accidental occurrence of burns, which, although perhaps of no great moment, delay treatment.

He finds that all cases of traumatic origin are benefitted more or less by the galvanic current, that the sooner treatment is commenced, the sooner, more rapid, and greater the effect; that the effect is more quickly

produced than by any other method, except, perhaps, by hot air; and that the gain is permanent unless there is unrecognised bony obstruction.

In the case of disease the result is uncertain as to the increase of motion, but pain is alleviated and the swelling, whether due to infiltration of the soft parts or present as an effusion into the joint, is reduced. Ankylosis due to gout is least affected of any.

Ophthalmology.

UNDER THE CHARGE OF FRANK BULLER.

Syphilis of the Eye.

HELBORN. "Double Chancre of the Lids." *Münch. Med. Wochenschr.*, May, 1898.

GRUDER. "Bilateral Ulcerating Gumma of the Lids." *Wien. Klin. Wochenschr.*, September, 1898.

ANTONELLI. "Initial and Post-Initial Sclerosis of the Eyelid." *Wien. Klin. Wochenschr.*, October 13th, 1898.

STRZEMINSKI. "Hereditary Syphilis of the Eye in the Second Generation." *Archives d'Ophthalmologique*, October, 1898.

Helborn's case of double chancre of the eyelids is an example of a very rare condition. The patient was a lad of eleven years and the origin was traced to the boy sleeping with an elder sister who had mucous tubercles in her mouth and other evidences of syphilis. The infection of the boy was likely caused by kissing.

On the upper and lower eyelids there was a semicircular, raised ulcer with a yellowish-grey slough. When the lids were closed the two halves formed an almost complete circle. Other symptoms of syphilis soon developed; iritis, keratitis, and an acute optic neuritis. Under inunctions a rapid cure ensued.

Gruder's case was that of a girl aged seventeen years who had an ulcerated swelling in the right lower eyelid and one on both lids of the left eye. The etiology was at first obscure but they rapidly improved under compresses of mercuric chloride.

Gruder's deductions, in the second article referred to, are as follows:—

Next to the lips and fingers the eyes are the most common site for the extra-genital chancre. This latter is most common in Russia, where licking the eye with the tongue or bathing it with urine are favourite methods of ophthalmic treatment. The initial lesion is generally solitary, only seven cases being so far reported in which it was double. Luckily, the cicatrices left are usually small. Enlargement of the pre-auricular glands is of no special import as it is met with in other eye affections.

Antonelli states that many cases of strabismus are due to infections and toxins that are inherited from the parents. Of these infections, syphilis is the most usually found. Fifty per cent. of these patients

squint in childhood. Syphilis may cause strabismus in one of three ways. Firstly, there may be trouble in the sensorial portion of the apparatus governing binocular vision, the visual acuity of each eye being, however, up to the standard. Secondly, the cause may be in the motor apparatus or in the connection between this and the sensory organs. Thirdly, there may be pathological conditions of the eye such as astigmatism and rudimentary changes of the fundus oculi. In these, the reflex of direction may be present, but the reflex of convergence is deficient, as the visual impulse from each is different, not being equally good.

Strzeminski reports a very interesting case of a boy ten years old with marked defects in both eyes affecting the retina, choroid, and iris. These were coloboma of the irides, pigmentary degeneration of the retina, and areolar choroiditis. The external recti muscles were apparently absent. There was right sided deafness and paralysis of the right side of the tongue. These conditions had been noted shortly after birth. The boy was defective mentally and stuttered. A short time after the first consultation the boy was brought again suffering from a well-marked interstitial keratitis with iritis.

The grand-father of the boy had well-marked signs of acquired syphilis. There were no signs of acquired syphilis in either the father or mother, nor was there any sign of tuberculosis, but the signs of hereditary syphilis in the father were well-marked. A diagnosis of hereditary syphilis was accordingly arrived at, and a corresponding treatment was forthwith initiated, consisting of active mercurial inunctions for five months followed by a two months course of potassium iodide, and resulting in a complete cure of the corneal disease. The fundus of both eyes improved as did also the vision. A younger brother also showed to a marked degree the same lesions.

The Pupil.

BERNHEIMER. "The Reflex Pathway for the Pupillary Reaction".
Archives für Ophthalmologie, etc. 1898.

EICHHORST. "Intermittent Mobility of the Pupil in Tabes." *Deut. Med. Woch.*, June 9th, 1898.

KARPLUS. "Immobility of the Pupils in Hysteria." *Jahrbücher f. Psychiatrie und Neurologie*, No. 17, 1898.

Bernheimer claims, as a result of experiments on monkeys, to have definitely localised the pathway of the pupillary reaction. The optic nerves undergo partial decussation at the chiasma as do also the special fibres which have to do with the pupillary reaction. They proceed thence backwards to the corpus geniculatum externum, interweaving in their course with the other fibres of the optic tract. At the corpus genicula-

tum externum some fibres pass to its inner boundary, partially through its inner wall and then unite into a compact bundle of fibres which pass around and under the corpus geniculatum internum over its convexity against the lateral sulcus of the anterior corpora quadrigemina into whose substance they pass in a fan shape; from here they pass posteriorly upward and then downward and forward under the origin of aqueduct to a small-celled pair of median nuclei, the sphincter nuclei. Thus each sphincter nucleus is connected with both eyes by both crossed and uncrossed fibres. There is also a central connection between them.

Eichhorst states that out of 103 cases of tabes he observed the intermittent mobility of the pupil in two. The first case was a woman 38 years old. In September 1893, the right pupil was larger than the left, but both reacted to light and accommodation. In January 1894 the light reflex was lost. The patient was not seen again for two years when in February 1896 the light reflex had returned but was lost again in June 1896 for four days, when it returned again for ten days. On December 17, 1896, the light reflex was absent and has remained so ever since.

The second case was a woman 38 years old. In 1891, the pupils were equal and reacted slowly to light and accommodation. In 1892, there were severe lightning pains which were relieved by salicylates; the pupils reacted now more promptly. In 1895, a perforating ulcer of the foot occurred and the patient was generally worse. The left pupil was immobile to light, the right was mobile. In 1897, the general symptoms were worse, the right pupil was larger than the left, and both reacted to light and accommodation.

Karplus, as a result of his studies, does not consider the immobility of the pupils as of diagnostic value in differentiating hysteria from epilepsy. In hysteria major the pupils may present exactly the same phenomena as in epileptic convulsions.

In cases of nonconvulsive hysteria, the patients lie with closed eyes as if dead and with complete immobility of the pupils to light. Similar conditions were seen in hysteria with convulsions and respiratory movements without loss of consciousness and also in milder forms. This variety of pupillary immobility, Karplus thinks, is a cortical phenomenon as he believes that pupillary contraction and dilation have their spheres in the cerebral cortex; if from any reason the cortical impulse be interrupted a state of cramp arises in the iris muscles. He compares the spastic state of the iris to hysterical contractions of the lower limbs.

Metritic Iritis.

MAZET. "Metritic Iritis." *Annales d'Oculistique*, November, 1898.

Mazet's paper is the result of observations on two patients. Both suffered from an endometritis which was greatly aggravated at each men-

strual period. Iritis in each case began a few days after menstruation had set in, and in one case there was pus in the anterior chamber. The patients were both healthy and had no trace of any hereditary infection.

Mazet considers them due to an absorption of toxic agents by the denuded uterine membrane, this situation being the point of least resistance. Cohn claims that the ciliary veins of the eye are congested during menstruation and this would support this hypothesis of Mazet's. Both cases yielded readily to treatment of the uterine and ocular conditions.

The Bacteriology of Phlyctenular Conjunctivitis.

MICHEL. "A Contribution to the Bacteriological Study of Phlyctenular Conjunctivitis." *Annales d'Oculistique*, October, 1898.

As a result of cultures from 18 cases of phlyctenular conjunctivitis, Michel found in 10 cases the staphylococcus pyogenes aureus and 7 times the staphylococcus pyogenes albus. Out of the 10 cases, the germ was found in pure culture in 9, and mixed with a diplobacillus once. Of the 7 cases in which the S. pyogenes albus was found, it was in pure culture in 5, mixed with an unknown bacillus once, and once with the sarcina lutea. Inoculation of all the germs in the eyes of rabbits set up the disease, although the introduction of numerous sterile irritants under similar conditions did not. His conclusions are:—

(1) Phlyctenular conjunctivitis is essentially a parasitic disease, the cause being a microbe, and the unhealthy condition of the patient merely predisposing.

(2) Planting the contents of the phlyctenulæ on various culture media gives rise to colonies of diverse forms of microbes, the staphylococcus being the most frequent by far.

(3) The inoculation of the staphylococcus and of most of the other microbes beneath the corneal epithelium of the rabbit produces lesions analogous in appearance to the phlyctenula of the human subject.

(4) The anatomico-pathological examination of the experimentally produced phlyctenulæ shows that in the case of man the lesion is not confined to the subepithelial space but that it is accompanied by a superficial infiltration of the corneal tissue. This superficial infiltration in the case of man as well as of the lower animals should be capable of producing the phlyctenulæ.

(5) The phlyctenulæ seem to be caused by a reactive lesion of the organ against microbes that have invaded the cornea.

Ocular Therapeutics.

VILLARD. "Airol in Blennorrhœa Neonatorum." *La Clinique Ophthalmologique*, Nov., 1898.

RISLEY. "Cassaripe, A New Remedy for the Treatment of Corneal Ulcers and other Infectious Diseases of the Eye." *Philadelphia Med. Jour.*, October 29th, 1898.

Villard uses airol in two to three per cent. ointments, twice or thrice daily. It at first increases secretion and swelling, which lasts for about an hour; there is also some pain lasting fifteen minutes. After an hour a thin, yellowish membrane will be found coating the inner surface of the lid; this membrane is easily removed. After a few days use combined with a permanganate of potassium collyrium, the secretion of pus is arrested and with this the utility of airol ceases and one must then change to some of the other well-known remedies. Willard claims great success with it.

Cassaripe is the concentrated juice of the well-known cassava plant of the tropics. Risley has used it in ointment form of the strength of ten per cent. in ulcers of the cornea and purulent disease of the conjunctiva. It is applied between the lids twice or thrice daily and the lids massaged so as to spread it thoroughly over the eyeball. It causes no irritation and the improvement in the eye disease is very rapid. Even in a case of blennorrhœa neonatorum its success was very marked. In ulcers, atropin and a boric acid lotion were also used. Cassaripe is a powerful vegetable antiseptic.

J. W. Stirling.

Reviews and Notices of Books.

DISEASES OF THE EYE.—A Handbook of Ophthalmic Practice for Students and Practitioners. By G. E. de SCHWEINITZ, A. M., M. D. With 255 illustrations and two chromo-lithographic plates. Pp. 696. Third Edition, thoroughly revised. Philadelphia, W. B. Saunders, 1899.

Dr. G. E. de Schweinitz's handbook in its third edition is a much more elaborate and extensive work than in the two previous editions. It now passes almost beyond the bounds of the ordinary text-book and becomes really a "system" of ophthalmic surgery.

It is curious how in this work, as in so many others dealing with eye diseases, the subject of orbital affections is very cursorily passed over; the differential diagnosis of tumours of the orbit is decidedly lacking in detail. The article on operations is really good, but in mentioning the possibility of pain during the twenty-four hours after cataract extraction, the retention of tears inside the eyelids is not mentioned as being one of the most frequent causes of severe pain.

The subject of optics and refraction errors is very clearly and well put; that of the light sense and its variations and indications might be much more thoroughly handled. In a book of this extent a chapter on ocular symptoms and diseases in their relation to constitutional and other disease would be a valuable adjunct.

The book itself is a fine specimen of the publisher's work and is profusely illustrated.

J. W. S.

TRANSACTIONS OF THE AMERICAN OPHTHALMOLOGICAL SOCIETY.
Thirty-Fourth Annual Meeting, New London, 1898. Hartford,
Published by the Society. 1898.

The Transactions of the American Society of Ophthalmology forms, as usual, most useful reading material. The report of the committee on resolutions relating to Purulent Ophthalmia in Infancy draws attention to the faultiness of the American statistics on the subject, and the necessity for fuller and more thorough reports in future. Dr. Charles Stedman Bull contributes a valuable article on Some Unusual Tumours of the Orbit, Eyelids, and Vicinity; and Dr. G. E. de Schweinitz reports a series of cases of Growths of the Choroid, Lachrymal Gland and Sac.

The surgical treatment of myopia comes in for a share of consideration,

Dr. Wilmer considering that a myopia of 25 diopters is the ideal degree from which to get the best practical results by operative procedure.

Dr. Wheelock Rider's article on Unilateral Winking as a Test of Comparative Visual Acuity is a most elaborate one. His deductions are that the comparative facility with which one or the other eye is separately closed is dependant upon, and may therefore be used as a test of the comparative visual excellence of the two eyes.

It would be impossible here to mention in detail the numerous papers read at the meeting of the society but they are well worthy of a careful perusal.

J. W. S.

TWENTIETH CENTURY PRACTICE OF MODERN MEDICAL SCIENCE. Edited by Thomas L. Stedman, M. D. Volume V., Diseases of the Skin. New York, William Wood & Co., 1896.

This volume of the Twentieth Century Practice is by eleven of the leading dermatologists of Europe and America. There is a short introductory chapter by Charles W. Allen of New York on the anatomy of the skin and its appendages. L. Duncan Bulkley of New York contributes the chapter on parasites, both animal and vegetable. The erythematous affections are well described by H. H. Whitehouse of New-York. Erythema exudativum multiforme is particularly well presented; peliosis rheumatica is included among the erythematous affections. The chapter on eczema and dermatitis is written by James Nevins Hyde, who, besides the usual types of erythematous, papular, vesicular and pustular, designated by him the primary forms, describes papasitic, neurotic, marginate, diabetic, sclerotic and verrucose forms making also a separate class for eczema intertrigo, fissum, and infantile and chronic eczema. The local varieties, too, are taken up separately. The squamous affections by H. Radcliffe Crocker include psoriasis and pityriasis rubra and rosea.

Under papular affections, L. Brocq describes lichen ruber and pityriasis rubra pilaris as distinct diseases, holding that many of the cases of lichen ruber acuminatus of the Vienna school are in reality pityriasis rubra pilaris. Lichen scrofulosorum completes the chapter. The bullous and pustular eruptions are treated by Whitehouse, the phlegmonous and ulcerative by Crocker, the diseases of the sebaceous and sweat glands by Van Harlingen, and of the hair and nails by Douglass W. Montgomery. The book closes with a very complete account of the dermatoneuroses, by H. Leloir, of Lille, a subject to which too little space is devoted in most text-books on skin diseases. Leloir has made a special study of this branch of dermatology and this chapter forms a valuable monograph on the subject. The value of the volume is much

enhanced by very complete biographical references at the close of each chapter.

G. G. C.

TRANSACTIONS OF THE AMERICAN CLIMATOLOGICAL ASSOCIATION FOR
1898.

This volume contains a series of readable papers, devoted almost exclusively to diseases of the chest, of which a perusal of the transactions will convey a number of useful hints on diagnosis and treatment. The Presidential Address, by Dr. Edward O. Otis, gives an interesting sketch of Auenbrugger and Laennec the discoverers of auscultation and percussion. F. H. Williams, in a paper on Clinical uses of Röntgen Light, illustrates the value of this method in the diagnosis of obscure aneurisms, incipient tuberculosis, cedema of the lungs, pericardial effusion, etc. In certain obscure cases, particularly aneurism, this method gives certain information which can be obtained in no other way.

Tuberculosis as might be expected comes in for a fair share of attention. Many things which have been said before are here repeated, and on this well-worn theme no very startling advance is announced. The old stories, however, will bear repetition in their present dress and bear the imprint of matured judgement and observation.

F. G. F.

Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Stated Meeting, April 10th, 1899.

J. G. ADAMI, M.D. PRESIDENT IX THE CHAIR.

Two Cases of Myomectomy—One During Pregnancy.

Dr. LAPHORN SMITH reported two cases of myomectomy, from one of which the tumour removed had been shown at a previous meeting of the society. In this latter case the operation had been performed during pregnancy and the patient had gone on to full term and been delivered of a healthy child. (See page 339 of the May number.)

Gastric Ulcer—Hæmatemesis—Operation.

Dr. J. M. ELDER reported this case which will be published later.

Dr. H. A. LAFLEUR said that in spite of Dr. Elder's experience, he would be loth to give up the use of morphia in bleeding from a gastric ulcer. In the majority of cases the bleeding did not come from a vessel of the size in the one reported; oozing and capillary bleeding could be controlled by morphia combined with bismuth.

Tuberculous Meningitis Lumbar Puncture—Tubercle Bacilli Found in the Fluid Obtained.

Dr. H. A. LAFLEUR read a report of this case. (See page 279 of the April number.)

Dr. JAMES STEWART looked upon lumbar puncture as a very valuable means of diagnosis. Unfortunately it was not always so successful as in this case and often gave a negative result from unknown reasons.

THE PRESIDENT pointed out that the failure of the inoculated animal to succumb to tuberculosis did not by any means necessarily indicate that the fluid extracted was free from bacilli. It is to be remembered that in order to produce tuberculosis, either subcutaneous or intraperitoneal, a certain minimum number of living bacilli are requisite. In the guinea pig, according to Wyssokowitsch, at least 15 must be present for the production of intraperitoneal tuberculosis. Hence, we must be prepared to find that in a certain number of cases of definite tubercular meningitis, the animal inoculated fails to confirm diagnosis.

Dr. LAFLEUR, in reply, admitted that lumbar puncture was in no sense curative, as extensive observations on this continent and in Europe had brought out. It was used now simply from a diagnostic point of

view. Even when bacilli were not seen one could draw some deductions from the character of the fluid. In cerebro-spinal meningitis it was turbid and contained pus cells, while in tuberculosis it was almost clear and pus cells were absent. The proportion of cases in which tubercle bacilli had been found was 30 per cent., some observers having had better luck than others. Centrifugalisation of as large a quantity of fluid as possible was most likely to be successful.

Carcinoma of the Larynx.

Dr. A. G. NICHOLLS read for Dr. H. S. BIRKETT, who was unavoidable absent, the report of this case. (See page 343 of the May Number). The pathological specimen was shown by Dr. Nicholls.

Pneumonia after Ether Anæsthesia, with Report of a Case.

Dr. G. GORDON CAMPBELL read a short paper on this subject. (See page 434).

Dr. W. F. HAMILTON had at present under observation a patient aged four years, the subject of pneumonia which in all clinical appearances is lobar pneumonia. The disease set in very suddenly on the day following an operation for adenoids. The period of ether anæsthesia was brief, as it always is in these cases, and there was no exposure of the body to cold. The right lung shows very extensive consolidation and, on examination to-day, signs of acute disease at the left apex were made out.

Dr. G. A. BROWN referred to a case of lobar pneumonia following ether which he had had a year ago and which he attributed to the exposure incidental to the operation. He thought that the method of commencing the anæsthesia with nitrous oxide was a good one as it avoided the irritating effect of the ether upon the mucous membrane of the air passages and so prevented the collection of large quantities of mucus in the mouth and throat, a great advantage. He asked if the post-nasal disease present in the case reported could have had any bearing as a cause of infection of the lungs.

Dr. ARCHIBALD asked how the throat was kept free from mucus. He referred to some observations of his own which showed that the metabolism was diminished while under ether anæsthesia. He had found the rectal temperature was materially reduced by prolonged anæsthesia.

THE PRESIDENT stated that in discussing this subject of ether pneumonia and of pneumonia in general, as indeed in connection with all infective diseases, it was necessary constantly to bear in mind that infection is the result of the interaction of two processes; (1), the virulence of the micro-organism, and (2) the vitality or resisting power of the tissues. Unless we bear this in mind, we cannot comprehend how it is that pneumonia is the exception rather than the rule for, according to the different authorities, from 15 to 50 per cent. of healthy individuals show the diplococcus pneumoniae in cultures taken from the throat;

and, as Sternberg has pointed out, without any sign of disturbance in health, the diplococcus may be present for months in the throat of an individual and then for another series of months may be completely absent.

Consequently in discussing the subject of ether pneumonia we have to take into account (1) the effect of the ether upon the diplococcus which may be present in the throat and air passages and (2), the effect of the ether upon the mucous membranes of the air passages. If the ether lowered vitality of the mucosa to a greater extent than it acted upon or depressed the vitality of the microbes, then pneumonia might be expected to supervene. Judging from the frequency with which the diplococcus was found in the healthy throat and the peculiar rarity of pneumonia after ether administration, we must, he thought, conclude that the ether tells more upon the diplococci than upon the mucous membrane and we must be inclined to regard the supervention of pneumonia as due to some added factor.

With regard to the distinction between lobular and lobar pneumonia, it might perhaps be pointed out that the hard and fast lines drawn by the textbooks, do not represent the true condition of affairs. The distinction seemed to be largely an anatomical one and it depended upon the exact portion of the air passages primarily affected. But etiologically, as shown recently by Horton-Smith and others, it had to be recognised that in the majority of cases of broncho-pneumonia, one had present a diplococcus as a causative agent, just as one has in the majority of cases of lobar or acute crupous pneumonia. And certainly of late years since grippe has been so common, the pure type of lobar pneumonia described in the textbooks, with the homogeneous implication of the whole of a lobe, had been largely wanting. Possibly the influenza bacillus might have modified the course of the disease. It was also possible that the more careful examination of post mortem material might have something to do with this discovery.

The frequency of the occurrence of broncho or lobular pneumonia in these cases which follow upon the administration of ether, might possibly be due to primary irritation of the bronchi by foreign matters, particles of food, etc. As already stated, the rarity of the condition would seem to indicate that some other factor besides the ether must be called upon to explain the development of the condition.

Dr. CAMPBELL, in reply, stated that he had had so little trouble from the collection of mucus when the ether was given slowly and carefully that he had never attempted to use nitrous oxide gas as a preliminary to ether. He had seen the gas used, however, many times and the results were very satisfactory. With regard to the lowering of the body temperature and lessened metabolism, referred to by Dr. Archibald, the

speaker had pointed out some years ago that the amount of urine secreted during ether anæsthesia became less and less in proportion to the time under ether, and the amount of solids contained, also, gradually fell.

Mucus in the throat obstructing the respiration could either be sponged out by means of a gauze sponge on one of the old fashioned sponge-holders, or the patient, in extreme cases, could be allowed to come partially out of the anæsthetic, and then touching the back of the pharynx with the sponge-holder would induce vomiting and empty the lungs to a certain extent as well as the upper parts of the air passages. With regard to the post-nasal disease in the reported case being a possible source of infection for the pneumonia, Dr. Campbell did not believe that lobar pneumonia was ever due to ether. Pneumonia following ether and due to it must necessarily be of the lobular form.

Stated Meeting, April 17th, 1899.

J. G. ADAMI, M.D., PRESIDENT IN THE CHAIR.

The Prevention and Cure of Tuberculosis.

Drs. DUNCAN McEACHRAN, H. A. LAFLEUR, A. D. BLACKADER, A. J. RICHER, W. H. JAMIESON, and H. McL. KINGHORN took part in the discussion, Dr. McEachran's paper being read by the PRESIDENT in the former's absence. The papers by Drs. McEachran, Lafleur, and Richer will be found in the present number of the JOURNAL. The others will be published later.

THE
Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

VOL. XXVIII.

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No. 6.

EPIDEMIC CEREBRO-SPINAL MENINGITIS.

During the past few months another epidemic of this disease has made its appearance, and numerous cases have been reported from Philadelphia, Washington, and St. Louis. From our exchanges, we note that instances of the disease have occurred in Toronto and its vicinity, and during the past few weeks several undoubted cases have applied for treatment in the Royal Victoria and Montreal General Hospitals. The disease presents many points of interest both to the physician and to the pathologist. Although regarded as endemic in many of the larger cities of America, Councilman cautions us against accepting as instances of the disease, sporadic cases in which the diagnosis was made from the clinical history only. Although in going over the clinical histories of numerous cases one receives an impression of the epidemic form which differs somewhat from the pneumococcus form and the streptococcus form, yet the clinical history alone is not conclusive. Autopsy accounts are only conclusive when accompanied by a careful bacteriological or histological investigation. In the reports it may generally be assumed that the recoveries were from the epidemic form. So far he has not been able to find a case of undoubted pneumococcus meningitis which has recovered; neither has he noted any recoveries from cases of meningitis secondary to thrombosis of the lateral sinuses, or disease of the middle ear. As far as can be ascertained from the records of the Boston City Hospital for the 5 years previous to the epidemic of 1896, no cases of meningitis due to the diplococcus intracellularis occurred within this period. The relation of sporadic cases to the epidemic form is one of much importance, and can only be determined by a careful bacteriological examination in all cases of meningitis of the cerebro-spinal fluid obtained by lumbar puncture. Little is to be learned from mortality tables as to the occurrence of this disease, as many cases are reported as epidemic meningitis which are not so; while in all probability true cases often fail to be recognised.

The mode of infection is not very clear, a few instances of supposed direct propagation from patient to patient have been recorded, but this is by no means the general rule. It does not appear to spread from any centre of origin, either by contiguity, or on special lines of travel but breaks out at diverse and apparently disconnected places. Its development appears to be independent of local peculiarities of soil or situation. It is met with in town and country alike. When once it has appeared in any locality, the contagion appears to remain about that place for some time. Epidemics of cerebro-spinal meningitis, so far as have been noted, differ from epidemics of other infectious diseases in that they do not steadily mount up to a maximum and then decline, but appear to proceed by fits and starts; crops of fresh cases appearing at irregular intervals and in more or less distant foci. The disease is most apt to appear during the late winter and spring, and children and young adults appear to be particularly susceptible. It very rarely attacks infants under one year of age, and is seldom met with in the more advanced periods of life. The point of entrance is probably through the nasal cavities. The organism appears to have feeble vitality, and is with difficulty cultivated artificially.

As to treatment, we have no remedy which can be depended upon to either check the disease or shorten its course. Marked variations in the severity of the symptoms are liable to occur at short intervals, a fact which should render us cautious not to confound apparent therapeutic results with coincident improvements. Little value is to be expected from the mercurial treatment or from the severer methods of counter-irritation recommended by some authors. The important indications appear to be to secure rest, to relieve the depressing influence of pain, and to sustain the strength of the patient. In our experience much benefit has been obtained from the employment of hot baths at a temperature of 100°F. to 102°F.; a method of treatment originally recommended by Aufrecht. Transportation from the bed to the bath should be conducted as carefully as possible. If much pain is present in the spine, the patient may be lifted out of bed by means of the sheet on which he lies, and with it lowered into the bath. After the bath the patient should be wrapped in a woollen blanket, and have another covering thrown over it. No drying or rubbing of the body is to be attempted. While in the bath, an ice bag or iced cloths should be applied to the head; the time in the bath should be from 8 to 10 minutes. Baths at this temperature relieve the pain, promote elimination of the toxins, and generally secure a quiet and restful sleep. In the intervals between the baths, should the temperature run high, Leiter's coil may be applied to the head, neck or spine. The diet must be nourishing, and should, as far as possible be pushed. Should the pulse become weak, in our opinion,

alcohol is not contraindicated. In a recent number of the *Lancet*, Rolleston and Allingham report a case of cerebro-spinal meningitis, treated by laminectomy. The patient was a man 24 years old who was suffering from what appeared to be a severe type of the disease, and in the judgment of the attending physician under simple medical treatment appeared to have little chance of life. Surgical intervention was therefore undertaken; an incision was made over the spines of the lower dorsal vertebrae, and the laminae of the 7th and 8th were excised; the exposed and bulging dura was incised for about an inch in the long axis of the cord; coagulated lymph and cerebro-spinal fluid escaped; a drainage tube was inserted, and the wound dressed antiseptically. Decided improvement at once ensued; for three and a-half weeks the discharge continued; and on any interference with its flow, the symptoms became aggravated. On the thirty-fourth day the temperature remained normal, the discharge greatly diminished, and shortly afterwards disappeared. The tube was removed on the fortieth day, and the wound was completely healed eleven days afterwards. In this case the result appeared to confirm the wisdom of the treatment. Whether a similar result will follow in any large number of cases, experience alone can show.

ON MENINGITIS.

During the past few years, our knowledge of this grave affection has in many directions been extended, and new methods of diagnosis have been afforded us; nevertheless it still is often a matter of much difficulty for the physician to distinguish between the various forms of the disease that may present themselves in practice. Cases of septic meningitis form a considerable proportion of the sporadic cases occurring. These, according to Collins, (*20th Century Med.*, Vol. X) may be grouped into 3 classes:—1st, Those in which the pathogenic bacteria have gained admission to the body through wounds or injuries; 2nd. Those which develop in connection with pathogenic disease in adjacent structures and cavities, such as the mastoid, middle ear, nose, or tonsil; and 3rd. Cases where the inflammation develops in connection with other infectious diseases, such as pneumonia, typhoid fever, influenza, or measles. In the first and second groups the streptococcus is generally the invading micro-organism; in the third group, although the streptococcus may frequently be found, the pneumococcus, staphylococcus, and other pathogenic bacteria are the most important forms. Septic meningitis arising from local mischief is often unilateral. Meningitis arising from pneumonia or any of the so-called specific fevers gives rise to no characteristic symptoms by which it can be distinguished from the symptoms of nerve irritation due to cerebro-spinal congestion induced by the toxæmia of the specific fever. (Osler). Meningitis due primarily to an in-

vasion of the tubercle bacilli is, however, the variety most frequently met with, and the one with which physicians generally are most familiar; it is characterised by a slow insidious onset, and an irregular march of symptoms to so far as we know an invariably fatal termination. In connection with this form of meningitis, however, it is to be remembered that although the existence of tubercular lesions in other parts of the body warrant us in supposing a meningitis to be of tubercular origin, nevertheless such a deduction does not always prove true. At a recent meeting of the American Pediatric Society, Acker reported two cases in which apparently complete recovery had taken place from pronounced symptoms of meningeal inflammation, although in both instances the patients were the subjects of distinct pulmonary tuberculosis. In the discussion on these cases, Holt mentioned the case of a child who had generalised tuberculous deposits, involving the lungs, glands, intestines, spleen, and liver, and who yet died of a non-tuberculous meningitis; the lesions found post-mortem being those of an acute purulent inflammation. In another case that he saw some years previously, a child with double hip joint disease developed meningitis, and got well. Six months later the child died from amyloid disease, and the autopsy showed no trace whatever of tuberculosis of the brain. From these histories he contends that it is not always safe to draw conclusions from lesions which exist in other parts of the body; although when meningitis occurs in patients suffering from tuberculosis of other organs, the diagnosis of tubercular meningitis is a very probable one.

Another form of sporadic meningitis met with occasionally in infancy is that to which the term posterior basic meningitis has been applied. Originally described by Gee and Barlow, it has until recently not attracted the attention which, as an apparently distinct form of meningitis, it would appear to demand. Carmichael, in a paper read before the last meeting of the British Medical Association, and Still, in a recent article (*Brit. Med. Jour.* 1898, No. 1972), have emphasised the constancy of its clinical and pathological features. According to Barlow, the important symptoms of this affection are vomiting, pronounced cervical opisthotonos, which occurs early and is constant and progressive, and the tendency to tonic spasm and rigidity, which is in contrast to the clonic spasms of tubercular meningitis. Regarding the etiology of this form of the disease, Barlow does not think that congenital syphilis bears any important part. In some of his cases traumatism seemed to have some influence; in a few, a history of catarrh preceded the onset of the attack; in many, however, there was a history of preceding good health. Still says that he has never seen a case of posterior basic meningitis in which there was any bone disease, or any evidence whatever of extension of inflammation from the ear, or from the nose. In all the cases examined

he found a diplococcus which, so far as the evidence went, appeared to be the specific exciting agent of the disease. Death in this form is distinctly less inevitable than in the tubercular form, and Still thinks that it is probable that some of the cases of supposed recovery from tubercular meningitis were due to this affection. When recovery occurs, however, it is by no means always complete; frequently a condition of hydrocephalus supervenes; or, with the development of the child, some mental defect makes its appearance.

Epidemic cerebro-spinal meningitis must now be regarded as quite distinct from the preceding affections. It is only recently, owing to the investigations carried on in the pathological laboratory of Harvard Medical College during the epidemic of 1896 and 1897, that we have recognised this affection as a definite disease due to a specific organism first described by Weichselbaum, the *Diplococcus intracellularis*. Cases of meningitis in which this micro-organism is found present a more or less characteristic clinical picture; the distinguishing symptoms are the sudden onset, the severe occipital headache, the painful stiffness and sensitiveness of the muscles, chiefly of those at the nape of the neck and along the spine; at the same time, temperature and pulse are variable and irregular, and run no uniform course; exacerbations and recurrences of fever are common, cutaneous rashes of various kinds may make their appearance; the urine may contain albumen, and, occasionally, sugar. Although the mortality is high, nevertheless a certain percentage of the more protracted cases recover. In such cases wasting is extreme, and convalescence is always slow. Very few escape without some permanent injury. Councilman calls attention to the tendency of the disease to produce permanent impairment of the mind. In distinguishing between these various forms of meningitis, Osler quotes Leichtenstern, as stating that in meningitis accompanying pneumonia, contraction of the muscles of the neck is often absent, delirium and coma is almost invariably present, and a fatal ending rapidly supervenes. In epidemic cerebro-spinal meningitis on the contrary, contraction of the muscles of the neck is invariably present, and even although delirium may occasionally supervene, long intervals, of lucidity occur; occasionally the sensorium may be clear throughout the entire course of the disease. According to Councilman the chief diagnostic symptom between pneumococcus meningitis and the epidemic form is the absence or slight development in the former of symptoms pointing to an extensive infection of the meninges of the cord, and of the roots of the spinal and cranial nerves. In all these forms of meningitis the most reliable means of diagnosis is lumbar puncture. In a paper read before the American Pediatric Society, Wentworth emphasised the following facts:—Normal cerebro-spinal fluid contains neither

cells nor fibrin, and is perfectly clear. In cases of meningitis the cerebro-spinal fluid is invariably clouded with fibrin; the degree of cloudiness is, to some extent, proportionate to the amount and character of the exudation in the meninges; it is sometimes so slight that close observation is necessary to detect it. This cloudiness is due to cells, the character of which differs with the form of meningitis. In cases of tubercular meningitis, the cells are chiefly small round cells, with a single nucleus, and very little protoplasm, resembling the lymphocytes found in the blood. Tubercle bacilli can only occasionally be detected. In purulent meningitis, the polynuclear leucocytes are very numerous, and the small round cells comparatively few in number. In epidemic cerebro-spinal meningitis, the specific micro-organism is almost always to be found, especially during the early stages of the disease. Occasionally the fluid withdrawn may be mixed with blood; this condition may be simply accidental, and due to the puncture itself, or it may be due to meningeal or ventricular hemorrhage. The former may be excluded, when repeated punctures bring forth a fluid showing the same quantity of blood. Positive conclusions, however, can only be drawn from positive, and never from negative, results of lumbar puncture. The operation, although a comparatively simple one, requires the strictest antiseptic precautions on the part of the operator; an antitoxin needle is preferable to the ordinary hypodermic syringe, as it is less liable to break and has a larger lumen, but aspiration is never necessary. Should the fluid not run well, a sterile wire may be passed through the needle *in situ*. The puncture is to be made, either between the 2nd and 3rd, or between the 3rd and 4th lumbar vertebræ; with the left thumb marking the interval, the needle should be entered either directly in the median line, or about a centimeter to either side of it. At the depth of about 4 cm. in children, and 7 or 8 cm. in adults, the needle passes through the membranes, and the fluid oozes out. The pain given appears to be slight. If the needle does not enter the canal, or if it feels as if the point were not free, the needle should be withdrawn for a short distance, and then reintroduced. Lateral movements of the needle may give rise to a hæmorrhage, which would obscure the character of the fluid. General anæsthesia is quite unnecessary, but the local anæsthesia produced by ethyl chloride may be employed.

ANTITETANIC SERUM IN THE TREATMENT OF TETANUS.

It would seem that serum therapy might almost claim another victory in the treatment of tetanus. This painful and fatal disease, that has for a very long time baffled the long and varied list of therapeutic agents that have been directed against it, must now yield to the steady patient labours of modern scientific medicine. It has been robbed of its terrors

by the discovery of the tetanus bacillus, antitetanic serum, and the researches of Roux and Borrel demonstrating the mode of attack of the bacillus upon the nervous cells.

Fortunately, scientific research and clinical experience in this matter are in harmony. Two points seem to be coming out pretty clearly. One is, that, as the tetanus toxin forms an indissoluble union with the nerve cells, the early exhibition of inhibitory or prevential doses to neutralise these toxins while they are free in the blood stream and before they have united with the nerve cells, is followed by the best results. The antitetanic serum is apparently harmless and should be used in the presence of wounds smeared with street dirt, stable dust, etc. By so doing it has been found in one hospital in Paris that this class of injury is much less often than formerly followed by tetanus. This plan is now adopted in the Montreal General Hospital, and although the cases so far treated thus are few in number, in no case up to the present has tetanus developed afterwards.

Another point is that the instillation into the frontal lobes of the brain of a quantity of the antitoxic serum protects the brain and spinal cord and is followed by a larger percentage of recoveries than is the subcutaneous or intravenous introduction of the serum.

THE TREATMENT OF SEPSIS BY ANTISTREPTOCOCCIC SERUM.

Of very great interest are the two cases of septic infection reported on another page by Dr. T. J. S. Halliday, of Peterborough, Ontario. Dr. Halliday may well congratulate himself upon his success. Scientific knowledge, forethought, and tact together can do wonders in these days. The reports of these cases will stimulate others to make use of the antistreptococcic serum. It was probably helpful in both cases, certainly in the first. In the second it must be noted that the improvement followed almost immediately upon the opening of the superficial abscesses, between the 1st and 5th of January. Doubtless some of our readers will say that the cleaning out of these secondary deposits was the essential factor in the after result. At any rate this case teaches that the use of antistreptococcic serum does not lessen the necessity of at the same time applying to the treatment of the case ordinary surgical principles.

The serum has been disappointing to many but it is apparently harmless and we think should be given a fair trial in cases of streptococcic infection and also in doubtful cases.

GESTA MEDICORUM.

"QUICQUID AGUNT MEDICI NOSTRI FARRAGO LIBELLI."

Dr. Charles Ogilvy, class of '98; has been appointed a resident physician at the Charity Hospital, New York.

At a meeting held on May 9th, Drs. John L. Day and Mackenzie Forbes were appointed Assistant Physicians, and Dr. R. A. Kerry, Assistant Ophthalmologist to the Montreal Dispensary.

Dr. E. M. von Eberts, M. R. C. S., class of '97, has been appointed Medical Superintendent of the Montreal General Hospital in succession to Dr. D. D. MacTaggart, who has resigned to enter private practice.

Dr. F. Montizambert, for so many years the efficient superintendent of the Grosse Isle Quarantine Station, has been transferred to Ottawa as Director-General of Public Health for the Dominion, with the rank of a deputy minister.

Quite a Montreal contingent was present at the recent meeting of the American Association of Physicians at Washington. It consisted of Drs. James Stewart, Wilkins, Adami, Lafleur, and Wyatt Johnston.

Dr. Stewart contributed a paper on "Tumours of the Pituitary Gland," reporting two cases which had come under his observation. Dr. Adami also gave the result of his recent studies on the morphology of the bacillus coli.

In this connection it may be stated that Dr. Wyatt Johnston has been elected a member of this association being one of the very few Canadian members in the society.

THE MONTREAL MEDICAL JOURNAL.

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No. 7.

Original Communications.

ON THE TREATMENT OF TUBERCULOSIS.*

BY

A. D. BLACKADER, B.A., M.D.,

Professor of Pharmacology and Therapeutics, and Lecturer on Diseases of Children.
McGill University ; Physician to the Montreal General Hospital.

It has long been the habit of the profession to regard phthisis as a well-nigh incurable disease; and such it undoubtedly is in those advanced cases, where the original infecting micro-organism has not only gained a firm footing, "but has called in auxiliary microbes to complete its ravages, and the patient has become the prey of a mixed infection." But in the earlier stages of the disease, to regard it as incurable is to paralyze our efforts and to lose for our patient the one golden opportunity of re-establishing health. During the past decade our appreciation of the curability of phthisis has certainly increased many fold. This increased confidence on our part in dealing with the disease, is to some extent due to the recognition on the post-mortem table that the spontaneous healing of local tuberculosis is an every day affair (Osler). Dr. Ransome states that 20 per cent. to 30 per cent. of all persons dying in hospitals between the ages of 25 and 75, show signs of healed tuberculous lesions (*Practitioner*, June, 1898, p. 564). The possibilities for successful treatment have been also increased by the fact that we are now able to make our diagnosis from a bacteriological examination of the sputum, at a distinctly earlier stage than formerly, when we had to rely on physical signs alone, or on the insidious and by no means distinctive symptoms from which many at the onset suffer. But the greatest encouragement to the profession has arisen from the brilliant clinical results which have followed the open-air method of treatment, a method first practised by Dr. George Bodington, of Warwickshire, England, in 1840 (*N. Y. Medical Journal*, Jan.

* Being a contribution to a discussion on the "Prevention and Cure of Tuberculosis," at the Montreal Medico-Chirurgical Society, April 17th, 1899.

14, 1899), and twenty years later successfully conducted by Dr. Brehmer, in Göbersdorf, in Silesia. During the past decade this plan of treatment has been carried out in many sanatoria scattered throughout Germany, Switzerland, France, Russia, Norway, and in our own immediate neighborhood by Dr. Trudeau in the Adirondacks. The statistics of these sanatoria show that in from 25 per cent. to 40 per cent. of the cases received for treatment, the disease is arrested and apparently cured, while two-thirds or more show great improvement; nevertheless, it is to be emphasised, that such statistics apply only to those cases in which the disease is recognised in an early or very moderately advanced stage.

As soon as the diagnosis of tuberculosis is made, both physician and patient should recognise the fact that the best, often the only chance of restoration to health lies in the adoption of thorough measures. While the physician should at all times endeavor, in the statement of hard and often cruel facts to exercise tact and judgment, that physician takes a grave responsibility who purposely deceives his patient, and permits the important early stage to be wasted in futile attempts to check cough by nauseating expectorants, or to bolster a failing nutrition merely by the administration of cod liver oil.

From the modern standpoint, the development of tuberculosis in any individual presents two factors: the specific germ and the favorable soil. Both must be present for the production of the disease. Ever since the important role played by the bacillus in the development of tuberculosis was recognised, attempts have been made either to destroy or inhibit the activity of the micro-organism by the internal administration of antiseptic drugs. Of such it may be said that thus far we know of none which can have any systemic action on the bacillus. Unquestionably, some drugs have a very effective local action, and when they can be applied directly to a tuberculous lesion excellent results may be obtained. We have, however, at present no drug which can be shown to have any specific constitutional action in pulmonary tuberculosis, nor is it at all likely that any such will be discovered in the future.

Attempts to modify the blood and tissues in such a way as to render them an unfavorable soil for the growth of the bacillus present a greater prospect of success. Such modification has been attempted along two diverse lines; the direct or specific, and the indirect or general hygienic method.

In the direct or specific method, attempts have been made to secure an immunity to the development of the bacillus, either by the employment of some antitoxin, which it was hoped might accomplish for tuberculosis what diphtheria antitoxin so successfully accomplishes for diphtheria; or, by the employment of the serum obtained from the blood of

an animal refractory to tuberculosis. These attempts must be regarded as having, so far, proved unsatisfactory. The tuberculins introduced by Koch, in the hope that they might prove antitoxins, are now generally regarded as lacking specific action: owing, apparently to the fact that in tuberculosis no such immunity is induced at any stage of the disease. Tuberculin cannot, therefore, confer specific immunity to tuberculosis; on the contrary, there appears to be the objection to its use, that it may distinctly irritate the tissues. Carefully employed, however, in selected cases, tuberculin appears to have in some instances effected a cure. This result, according to Whitaker, appears to have taken place not through any action of the agent upon the bacillus itself, but by an increase of inflammatory action in the tubercle, whereby the death of the bacillus was effected. Aside from the possibility that the irritation thus artificially induced may sometimes be excessive and thus defeat its end, it has been noticed by good observers that the agent has no therapeutic action on recent miliary tuberculosis, and is not capable of checking the spread of this process.

Other experimenters have employed the serum obtained from the blood of animals supposed to be refractory to tuberculosis. Among the more prominent of these experimenters is Maragliano, of Genoa, who reports the results obtained clinically from the injection of serum derived from dogs, asses, and horses treated with the toxins of tuberculosis. Paquin, of St Louis, claims good results from the use of the serum obtained from the horse. Stubbert, at the Loomis Sanatorium, claims distinct therapeutic powers for an anti-tubercle serum prepared at the biochemical laboratory of the United States Government. One can only say that, as yet, equally successful results have not been obtained by other impartial observers.

In a paper recently published in the *American Journal of the Medical Sciences*, Dr. Trudeau and Dr. Baldwin sum up the results of four years of experimental work in their laboratory, testing the anti-toxic power of serums in tuberculin poisoning as manifested in sound and in tuberculous animals. They state that with a full appreciation of the uncertainty of correct conclusions from tests of the serums other than their own product which were tried with tuberculin, only one indicated anti-toxic power; this was obtained from a horse inoculated with non-virulent cultures. The apparent protection against fatal tuberculin poisoning occasionally seen, cannot be regarded as necessarily due to the specific anti-toxic powers of the serums, for similar effects were obtained occasionally from physiological salt solution. None of the serums appeared to prevent local or general reaction from small doses of tuberculin, nor to influence the temperature of tuberculous animals. Disappointing as these results may seem, the writers feel that in the light of recent contributions to our knowledge of the mechanism of immunity,

and anti-toxin production in the body, the outlook for an efficient tuberculosis anti-toxin is by no means a hopeless one.

Although failure has thus far attended our attempts by the direct specific method to immunise the tissues and render them an unfavorable soil for the development of the bacilli, comparatively satisfactory results have followed persevering, well directed efforts at strengthening the inherent resisting powers of the patient, by careful hygienic measures, a full dietary, and more or less complete rest. Thus, after the lapse of 2,000 years have we come back to the doctrines of Hippocrates and Galen, who taught that regimen and hygiene are the great curative agents. This plan, as perfected by Dettweiler, may be thus enunciated:—

1. A life, as much as possible spent in the open air and sunlight.
2. A full dietary, consisting of easily digested and nourishing food rich in carbo-hydrates and fats.
3. Rest, or moderate exercise short of producing breathlessness or fatigue, according to the condition of the patient, and the activity of the disease.
4. Such an amount of hydrotherapy as may be deemed advisable by the attending physician.

Supplementary to these

(a) Such general medication as may be of service in furthering these measures.

(b) Such symptomatic treatment as may serve to remove any offending symptom seriously interfering with the carrying out of the plan.

The value of the open air treatment of tuberculosis is no longer a matter upon which any disagreement among the profession can be said to exist. It may, at first, be difficult to convince the patient and his friends of the importance of living constantly out in the open air, not merely on one or two hours on pleasant days, but for the greater part of every day; eight hours at least out of the twenty-four are to be spent in the open, whether the sun shine, or the weather be cloudy; whether it is warm or cold. Stormy weather, with high winds, is alone excepted. At night the windows are always to be open in the sleeping room. Patients who may have been accustomed to over-heated and poorly ventilated rooms may not be able, at the onset, to stand this treatment for the whole day, but they should aim at accomplishing the hardening to it, as rapidly as possible. Sun parlors, such as are provided in many health resorts, are, in this plan of treatment, regarded with disfavour. Protection only from strong winds and rain is considered desirable. In pavilions or verandahs protected only on the side from which the wind blows, the patients should sit on easy chairs, or, if weakly, should recline on a sofa. In cold weather the feet must be kept warm by a hot water tin, or a stone, and rugs or furs should be used freely.

Much has been written on the relative therapeutic value of various climates and different altitudes. While it may be stated that the profession is generally agreed that a pure dry air with a minimum of cloudy or stormy days, and comparative freedom from high winds, offers the most desirable conditions for the treatment of pulmonary tuberculosis, Layden, of Berlin, and Osler, in Baltimore, both consider that to guard against relapse, and for the future well-being of the patient, it is better that treatment be conducted at an altitude not very different from that to which the patient has been accustomed. Many physicians, however, believe that an elevation of from 3,000 to 5,000 feet, in incipient cases, with little or no pyrexia, nervous erythsm, or cardiac disease, *ceteris paribus*, is of distinct advantage; and I have in no instance noted any especial tendency to relapse, or to suffer at a later date from other pulmonary or cardiac disorder in those who have been cured at this altitude. It is, however, a point to emphasised that a special climate is not an essential in the successful treatment of the disease, although it is important to have, as far as practicable, freedom from dust and smoke, protection from sharp winds, and a large number of sunny days. Many of the climates which have acquired a reputation for the treatment of phthisis are by no means to be commended. Foreign or strange surroundings often discount climatic advantages, and home treatment methodically carried out is in some instances the preferable plan. Even in towns and cities the air in open spaces, on elevated galleries, or even in the streets, is much purer than that within houses; and for those who can do no better, even such an air utilised to the fullest extent will produce results which may not compare unfavorably with those of many health resorts.

In all cases where we have to deal with febrile conditions, this life in the open air must, at the outset, be one of complete rest; for such the recumbent or semi-recumbent posture is preferable, especially in cold weather. As the patient becomes habituated to the treatment, considerable variations in the temperature or in the character of the weather may be disregarded. At the various sanatoria the treatment is carried out summer and winter, in rain and in snow. The results obtained by this treatment, when rigorously carried out, are very striking. A gradual reduction takes place in the amount of fever; the appetite improves; body weight increases; sleep becomes sound and refreshing; and night sweats to a great extent pass away. At the same time, physical examination reveals a distinct improvement in the pulmonary condition. While in all cases in which any indications of activity in the disease show themselves, life out of doors must be principally one of rest, afebrile cases may be benefited by moderate exercise, depending largely upon the general strength, the amount of lung involvement, and the condition of the heart. In no case, however, should exercise be carried to

the point of exhaustion or to the production of either dyspnoea or much perspiration. In incipient and afebrile cases, breathing exercises methodically performed have, I think, considerable value. In these breathing exercises inspiration should be as deep as possible, with shoulders well thrown back, while expiration should be slow and prolonged. Even after the disease appears completely arrested, it is desirable that the patient should remain a considerable time under the influence of those conditions by the aid of which health has been restored. "Nothing ever gets quite well," was a favorite aphorism of the late Sir George Humphrey; and tuberculous patients should bear it in mind.

Sir Douglas Powell has recently laid stress upon the fact that life in a sanitarium is, to a considerable extent, educational in its value; treatment of the disease must be extended far beyond the few months' residence in an institution, and a successful issue is only attained by the steadfast application of the lessons that have been learned under the eye of the physician. As far as may be practicable a return to the ordinary duties of life under conditions similar to those which existed when the disease commenced should be avoided.

On the subject of the diet of these patients, it is only necessary to emphasise the importance of the maintenance of nutrition as a factor in the treatment; tuberculous patients with active disease require a much larger quantity of food than those in health, to compensate for the increased waste of tissue; and if digestion is unimpaired, they can usually assimilate well this increased amount. The food as supplied at ordinary meal hours should be plain, well cooked, and nourishing, but at the same time savoury, and varied in character. In addition to the ordinary meals it is often desirable to furnish these patients with some liquid easily digested food between meal hours; a cup of hot coffee or tea containing a large proportion of milk in it, given the first thing in the morning shortly after awaking, relieves cough, assists expectoration, and at the same time counteracts the feeling of exhaustion which often follows the morning spell of coughing and distinctly interferes with the enjoyment of breakfast. At 11 a.m. a tumblerful of milk or beef tea is frequently able to be taken with benefit; and again at bedtime, a cup of some nourishing but easily digested farinaceous food taken warm, relieves the irritating cough, and tends to induce sleep. As an interne at Brompton Consumption Hospital, I had frequent occasion to note the marked improvement in appetite and nutrition which followed the employment of simple stomachic remedies, such as a mixture containing sodium bicarbonate with a simple bitter, or nitrohydrochloric acid with nux vomica. I am not surprised, therefore, to note that Kingston, in a recent article in the *Practitioner*, and Fowler,

in his late work on Diseases of the Lungs, both emphasise the value of such simple medication.

Alcohol in general is of value only so far as it favors the digestion and assimilation of food. In patients who rapidly increase in weight and show any tendency to increase of pulse tension it may favor hemoptysis and is therefore to be avoided. Cod liver oil is our most rapidly absorbed and most easily assimilated fat; it is, therefore, a food as well as a medicine of acknowledged therapeutic value. The majority of tuberculous patients take cod liver oil with advantage, and many authorities acknowledge that a patient will gain weight while taking cod liver oil, although he fails to do so under other medicines. Should it impair appetite, give rise to acrid eructations, or increase diarrhœa, it should at once be discontinued. Hydrotherapeutic measures are among the most valuable adjuvants in the treatment of the disease. Cold compresses are extremely serviceable for the relief of many of the minor ailments of tuberculous patients; while the cold sponge or douche, taken in regular methodical way, is of great value in toning the vasomotor system, and preventing the tendency to "catch cold" easily, so notable in many tuberculous patients. The best chest protector, says Ransome, consists in well douching the chest night and morning with quite cold salt water.

In regard to special medication, there is no occasion to repeat what must to all of you be well known facts. In my opinion, every accessory means of improving general nutrition should be taken advantage of, while all nauseating or depressing drugs should either be altogether avoided, or used in the most sparing quantities. Strychnine, as a stomachic and general cardiac and respiratory stimulant will, in many cases prove of great service. Creosote in moderate doses is occasionally of much service in checking fermentation in the alimentary tract; it also appears to be of decided benefit in cases associated with much bronchial irritation or secretion. Stubbart has employed ichthyol in keratin coated pills, with much success, especially in patients suffering from intestinal complications. He states that in a number of patients treated with ichthyol in daily doses of from 6 grs. to 10 grs., the results on weight, expectoration, cough, and the disappearance of bacilli were ten per cent. better than those obtained from the employment of creosote or any of its derivatives. My own experience with the drug has been too slight to draw any conclusions.

THE RESULTS OF SANATORIA AND SPECIAL HOSPITAL TREATMENT IN PULMONARY TUBERCULOSIS.*

BY

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A number of interesting questions arises in discussing the results of hospital and sanatorium treatment in pulmonary tuberculosis. Comparisons can be made between the results of treatment in sanatoria and hospitals for tuberculosis, but statistics are so notoriously uncertain that only an approximate opinion can be obtained from the figures available. This is due to the fact that the various modes of classifying cases as regards their stage of disease are so different. One must also remember that sanatoria take mostly incipient cases, whereas hospitals take cases in all stages. For example, at the Royal National Hospital, at Ventnor, there have been treated since 1870 nearly 17,000 cases. ("Prevention of Consumption." By Dr. J. G. Sinclair Coghill, *Nineteenth Century*, Feb. 1899.), and of these hardly one per cent. of the cases admitted were in the first stage, whereas at Gærbersdorf, they amounted to 27.62 per cent. Moreover, patients received at a hospital are in a much different physical condition than those received at a sanatorium, since, up to almost the present time, sanatoria have treated patients who are well-to-do, whereas hospitals have treated the ill-nourished poor.

In Knopf's thesis on "Les Sanatoria: Traitement et Prophylaxie de la Phthisie Pulmonaire," read before the Faculty of Medicine of Paris in 1895, there is a table of results which I, in part, copy. I also take the liberty of copying a table of results from E. L. Trudeau's article on "The Adirondack Cottage Sanitarium for the Treatment of Incipient Pulmonary Tuberculosis," which appeared in the *Practitioner* for February, 1899.. (See table.) I wish for a little to dwell on these tables, further on I shall discuss the terms "cured," "apparently cured," "disease arrested," and "improved."

In the second table it is seen that of the incipient cases that remained an average of nine months at the Adirondack Cottage Sanitarium, 73 1-3 per cent. were "apparently cured," while 34.48 per cent. of all the cases that remained an average of nine months were "apparently cured." In the first table, 26.38 per cent. is given. This has to do with the total number of patients that were admitted to the sanatorium in the year 1898.

* Read before the Montreal Medico-Chirurgical Society, April 17, 1899.

I desire to mention the excellent results at the Sanatorium de Turban at Davos, where 40 per cent. of the cases were cured and 40 per cent. improved. The above results are extraordinarily favorable, if one keeps in mind the virulence of the disease, which only 40 years ago was considered incurable. The results at the Royal National Hospital, Ventnor, are also remarkably good when one considers that hardly one per cent. of the cases admitted were in the first stage of the disease; 17.14 per cent. of all the cases were cured, and 61.11 per cent. improved. Allow me to emphasize these excellent results. By referring to the first table you will see that they are as good as those obtained at Liberty and better than those obtained at Gravenhurst. Ventnor is a practical proof of what can be done by hospital treatment of tuberculosis. It differs essentially from the other English hospitals in advantages of climate, locality, and the structural arrangements, having been originally designed for the purpose of obtaining the utmost possible exposure to open air and sunshine, as a fundamental principle in the treatment. I feel confident that equally good results can be obtained from consumptive hospitals situated outside the limits of our Canadian cities, provided the hygienic-dietetic treatment be employed.

As you are doubtless aware, consumptive hospitals for the poor have existed for a long time in England. Among them are Brompton, founded in 1841, with 321 beds; Victoria Park, in 1848, with 164 beds; North London, in 1860, with 75 beds; The City Road Hospital, in 1873, with 75 beds; and the Royal National Hospital, Ventnor, with 138 beds. It is worthy of mention that to them is very largely due the remarkable decrease in deaths from phthisis which has taken place in England since a date corresponding to their establishment. Roughly speaking, the deaths from phthisis in England have decreased by one-half since the seventies. This fact is often mentioned by continental authors as being an indirect result of consumptive hospitals.

Allow me to carry this idea of establishing consumptive hospitals for the poor a little further. If, in addition to the hospitals situated outside the city limits, we could establish sanatoria in suitable climatic localities not too far removed from the centres of population, I see no reason why results should not be obtained similar to those of the most famous continental sanatoria.

Roughly speaking, the number of cures from almost all sanatoria is estimated at one-third the number of those treated, provided they remain a reasonable time, say from three to nine months. I do not think I go too far when I express the hope that the number of cures will be much larger if patients undergo methodical treatment while they are in the incipient stage of the disease, and that almost every person under the foregoing supposition has the prospect of cure.

In examining the results of treatment at the different sanatoria, one is struck by the difference in the terms used. For instance, Dettweiler and his pupils use the term "absolutely cured," "relatively cured," "disease arrested," and "improved." In fact, the different phthisio-theraputists nearly all employ different terms. Almost all agree that absolute cures do occur. Observations of spontaneous cures have been gathered and published by clinicians of all countries, and I am sure there is hardly a practicing physician who has not seen a spontaneous cure. The largest number of cures has been observed in sanatoria. In his communication to the Congress of Buda-Pesth in 1894, Dettweiler made the statement that "the treatment in sanatoria is to that of people treated in a loose manner, as for instance in boarding houses, as the treatment of our hospitals is to that of our out-door consultations." Enumerations of results would have scientific value if the observations which have verified the cure were made under identical conditions. The various observers have not interpreted in the same way the objective signs furnished by observation, auscultation, and bacteriology. Knopf says that the discussions he had with the most distinguished phthisio-theraputists showed him that the conception of cure was interpreted differently by almost all. Darenberg, quoted in the treatise on medicine by Marfan, who adopts his ideas, says, "one can pronounce cured an old phthisical, who, during ten years, has resumed his occupations without having an hæmoptysis, an excess of fever due to an actual tuberculosis, or an expectoration containing tubercle bacilli. If, during ten years, he has been resistant to those bacilli lost in a corner of his lung and probably dead (for we have seen that dead bacilli are also irritative), there is no cause why he should again become phthisical, if he does not again place himself under the conditions in which he suffered his first attack. One must not forget that the tubercle bacillus is incapable of infecting all the tissues; that man is a being relatively refractory to tuberculous infection; that it is important to consider the virulence as the expression of the diverse modifications of the life of the microbe, which is being constantly influenced by the essentially changeable physico-chemical qualities of organic media. The physician recognizes that the tubercle bacillus thrives only on soils which are favourable to it; that one microbe is not sufficient to cause tuberculosis, and that as regards various diseases some at least of those affected by those diseases appear to accumulate morbid material in their tissues as a consequence either of hereditary or of acquired disposition." Dettweiler distinguishes the "absolute cure," and the "relative cure." He defines "absolute cure" as the re-establishment of normal functions in all the organs and the complete disappearance of bacilli from the sputum. A "relative cure" exists if the patient recovers his well-being, if the organs

function well, despite some fits of cough and some morning expectoration. His pupils, Meissen, of Hohenhonnef, and Turban, of Davos, make the same distinctions as their master.

Trudeau uses the terms "apparently cured," "arrested," and "improved." "Apparently cured" are those cases in which the rational signs of phthisis and the bacilli in the expectoration have been absent for at least three months, or who have no expectoration at all, any abnormal physical signs remaining being interpreted as indicative of a healed lesion. "Arrested" are those cases in which cough, expectoration, and bacilli are still present, but in which all constitutional disturbance has disappeared for several months, the physical signs being interpreted as indicative of a retrogressive or arrested process.

Sabourin, of Canigou, divides his patients into "curables," "improved," and "incurables." He does not use the word "cure" unless the cough and expectoration (expectoration without cough) have entirely disappeared.

Weicker, of Görbersdorf, considers "cure," taken in the sense of "*restitutio ad integrum*," as a miracle. He divides his curative results into,—(1) improvement recognized as such by the invalid himself, (2) improvement permitting the invalid to resume his occupation, whether manual or intellectual work, (3) simple improvement by the sojourn at the sanatorium.

Wolff, of Reiboldsgrün, agrees with Weicker, but recognises that improvement is able to be so remarkable as to permit of many invalids resuming their occupations and reaching a very advanced age.

I have given the views of some of the leading phthisio-theraputists concerning the terms "cured," "arrested," and "improved," let me now for a little discuss the term "cured" in a general way. Some says that tuberculosis is never cured, that in the cicatrix or fibrous tubercle the trouble is dormant and can be lighted up. But, it is well known that tuberculosis is able to reappear in a lung with cicatrices without any of the old centres being lighted up. The experiments of Kurbow have proved the frequent sterility of old fibrous or crataceous centres, and Herman Weber saw a patient die from typhoid fever who had twice recovered from pulmonary tuberculosis. It is reasonable and, I think, sufficient to admit that a lung, which has formerly had tuberculosis, should have acquired a special predisposition and have become a *locus minoris resistentiæ*. This may be accounted for by the insufficient activity of the lung tissue, or from some other cause. The intestine after typhoid fever is strewn with the cicatrices of Peyer's patches, the lung has fibrous nodules after the cicatrization of tubercles. Can we say that neither the one nor the other is cured, or that both have returned to an absolutely physiological condition? No one, to-day,

ventures to say that typhoid fever is incurable, and why should one contest the cure of tuberculosis? The experiments mentioned by Adami in the *MONTREAL MEDICAL JOURNAL* are perhaps the most convincing proofs that tuberculosis is absolutely curable. Virulent tubercle bacilli were injected into the peritoneal cavity of dogs. Some weeks later, on opening the abdomen, the peritoneum was found to be studded with miliary tubercles. The cavity was then closed and some weeks later again opened. It was then found that the tubercles had absolutely disappeared.

One is liable to ask:—Are these “cures” mentioned in the tables of statistics of a permanent character? In 1886, Dettweiler published a report of 702 cases completely cured of a duration of three to nine years. In the *Practitioner* for Feb., 1899, Trudeau gives the number of patients who received injections of Koch’s tuberculin. These patients were distributed over a period of seven years, and on their departure from the sanatorium were all classed as “apparently cured.” Some have not been traced, but of those that have, 67 per cent. are at present well and have not had a relapse.

From the facts I am about to mention, I am sure you will agree with me that it is the imperative duty of the large cities and of the state to establish both consumptive hospitals and consumptive sanatoria for the poor. I wish first to call your attention to what Ransome says in his Milroy lectures on the Etiology and Prevention of Phthisis, published in the *London Lancet* of March 8, 1890.

“Tuberculosis at the present day carries off annually nearly 70,000 persons in England at the ages of between 15 and 45,—the most useful stage of human existence. It kills more than one-third of the people who die, and nearly one-half between 15 and 35; moreover, in its prolonged and painful course, it either prevents its victims from earning a livelihood, or, at least, interferes greatly with their daily work. The habit of seizing upon the flower of the population; its slow but almost certain progress towards death; the utter misery of the last few months or weeks of existence; all these are features in the fell disorder that renders its study all important, not only to medical men but also to statesmen and to all who are concerned in the welfare of the nation.” The question of the loss to the state from the large number of deaths from pulmonary tuberculosis has not received the consideration at the hands of physicians and political economists which it should. The labor of every producer has a certain average value annually to the state. Estimates of this value vary from \$780.00 to \$2,000.00. Chadwick considers an English laborer equivalent to a permanent deposit of \$980.00. Farr gives \$780.00 as the average value

of each human life in England. In the Province of Quebec there are upwards of 3,000 persons who die of tuberculous disease annually, and, taking \$800.00 as the average value of each producer, we see that the province sustains an annual loss of \$2,400,000.00. In 1897 there were 497 deaths from pulmonary tuberculosis in the City of Montreal between the ages of 15 and 60, a loss to the city for that year of \$397,600.00. I am sorry to say that the annual report of the Board of Health states that, instead of decreasing, consumption goes on increasing from year to year.

I have endeavored to show that tuberculosis is a curable disease and that the state loses every year an enormous amount of money by not treating its poor in special consumptive sanatoria and hospitals. Treated in sanatoria, we should expect at least one-third of the cases to be cured, and just as many improved. The question now arises:—How can we accomplish the task of giving to the consumptive poor the benefits of the fresh air treatment? Knopf is of the opinion that every town and city should have a hospital for its consumptive poor. (1) That the hospital should be situated outside the city limits, in a site as favourable as possible, and should receive patients in all stages of the disease. (2) That sanatoria should be established within easy reach of the city, where chosen cases should be sent which have the most need of changes of air.

Von Leyden insists that in order to make sanatoria really beneficial, very sick tuberculous patients must be excluded, and only those admitted who have a decided prospect of cure or of considerable improvement. This is due to the fact that sanatoria have methods of treatment which are not suitable to bed-ridden patients.

Almost all physicians who have seriously considered the question of providing for the consumptive poor agree that advanced cases should have access to special hospitals near or in cities where they can be cared for. This is advisable on humanitarian grounds and also to limit infection, as such patients are often a serious danger to those about them if their secretions are not properly disposed of. They should be treated so far as possible according to those rules observed in the hygienic-dietetic treatment. Incipient cases, and advanced cases with a chance of recovery, should be sent to good climates, to sanatoria constructed for this purpose, and made to lead a regular life according to rule and under medical supervision.

In conclusion, I wish to consider for a little some points in the treatment of tuberculosis. Former speakers have already dealt with this part of the discussion, so I will dwell only on a few points.

There exist several methods of treating tuberculosis. The specific method aims at producing direct healing, and is directed against the

disease itself and its cause. To it belong medicinal and etiological therapy. The second method is called the "hygienic-dietetic," or "hardening" treatment, and seeks to strengthen the organism in order to make it capable of overcoming the disease.

With regard to the specific method, it is interesting to examine into the views of some of the leading workers on tuberculosis. Behring thinks that years must still pass before a serviceable tuberculosis serum will be obtained. Von Leyden says that so far as can be seen, the tuberculines which are being sought after, if they are found, will always give only an acceptable aid to the prevailing treatment for tuberculosis. Trudeau is of much the same opinion as von Leyden, and his views are particularly interesting at the present time. I may say that I give the following views with his entire approval.

He is hopeful that a tuberculin may yet be found, which, when applied to incipient cases, will enable the patient to acquire a certain degree of artificial immunity by stimulating his cells to an increased resistance or making them less susceptible to the toxic products of the disease. He also hopes that a more powerful tuberculous toxin may be obtained by laboratory methods, which, when applied to susceptible animals, will result in the production of an anti-toxic serum of sufficient potency to be of real service in the treatment of the more acute cases to which tuberculin injections are harmful rather than beneficial, because they are already overwhelmed with a poisonous product of the malady. But, as yet, there is no scientific evidence that an efficient antitoxic serum for tuberculosis has been produced. He thinks any encouraging results that may have been obtained in his hands at the sanatorium by the tuberculin treatment, have been dependant on the fact that the nutrition of the patient was kept at the highest standard throughout the treatment, and the doses increased so gradually that the system was never called upon to antagonise by any anti-body more of the toxin than it was able to cope with. Patients treated by this method at the sanatorium who have been discharged as apparently cured have seemed to suffer from relapses less frequently than those who have recovered under climatic and open-air treatment alone, but he calls attention to the fact that, unfortunately, it is impossible to determine whether this apparent immunity to relapse is the direct result of the tuberculin treatment, or whether the tolerance to large doses of this toxin shown by these patients indicates that from the first their tuberculosis was of a subacute or benign type.

We should not, however, calculate too much with probabilities. Practical medicine has to attend to the present and we cannot console our patients by holding out hopes to an uncertain future. We must treat them according to those methods which we recognise as the best, which are proved so by the greatest number of cures: that is, we should

treat them by the hygienic-dietetic treatment in separate sanatoria. The essentials of this method of treatment are:—

- (1) An appropriate climate.
- (2) Fresh air,—which comprises, (a) the being out of doors all day, (b) sleeping with open windows, (c) going out in all weathers.
- (3) Abundant nourishment.
- (4) Hardening.
- (5) Bodily exercise and rest.
- (6) Methodical carrying out of the treatment.
- (7) Appropriate medicines, which aid the rest of the treatment.

Though one cannot assign a specific action to any air, it is an important hygienic means, and by its stimulating action is capable of influencing the general tone of the organism and its resisting power. The hardening measures depend on the continuous use of fresh air, so that patients become accustomed to it and do not go indoors for fear of any weather. Employed in such a way, the free and courageous use of fresh air is of great importance. One naturally desires an air which shall be health-producing. It should be as pure as possible, i.e., free from dust and vapor. It should stimulate. Hardening treatment has obtained great recognition with other diseases besides pulmonary tuberculosis and is opposed to the effeminacy which one so often finds associated with invalids, and which is favoured by the love of the family and partly by the physician. It is a very powerful means which very materially assists to overcome the disease and prevent its relapse. It consists in the free employment of air without, or with lessened, fear of catching cold. I would like to mention here that there has been only one case of pneumonia at the Adirondack Cottage Sanitarium since it opened.

The principle aim of the modern sanatorium treatment of tuberculosis is to improve the patient's condition and increase his resistance to disease by placing him under the most favourable environment possible. The invigorating influence of a life spent constantly out-of-doors for many months, can hardly be overrated. With regard to exercise, Trudeau says:—"It is much better always to err on the side of over caution in prescribing active exercise to tuberculous patients, and I feel confident that many lives are constantly sacrificed to a deep-rooted and very general misconception which exists in the lay, and to a great extent in the professional, mind as well, in regard to the advantages of active exercise in this disease. If there is any one rule which should be generally applied to the treatment of tuberculosis, it is, that when any degree of fever is present, the course of the disease will be injuriously affected in direct proportion to the amount of active exercise the patient is allowed to take. Still further, I often see an apparently quiescent and arrested process

“fanned into renewed and often uncontrollable activity by one single
“over-exertion. This position in regard to exercise may seem rather
“an ultra one, but it has been amply sustained by abundant and un-
“fortunate experience in this direction. What is but moderate exercise
“for a man in health means over-exertion and exhaustion to the phthi-
“sical invalid. To see a man with a daily afternoon temperature of
“101°—102°F., and a pulse above one hundred, trying to gain strength
“by rowing a boat, riding a bicycle, or attempting to climb a mountain,
“as he is often advised to do, and to note the baneful effect of this
“course on his disease, will prove more convincing than any form of
“argument. Absolute rest, so long as it is taken in the open air, is
“the best measure at our command to reduce the pyrexia of tubercu-
“losis and to conserve the patient’s energies, and should be persisted
“in for some time after the afternoon fever has ceased to be present,
“moderate exercise being again allowed only with caution.”

TABLE I.
STATISTICS OF NINE SANATORIA FOR THE TREATMENT OF PULMONARY TUBERCULOSIS.

NAME OF SANATORIUM.	DIRECTOR.	MORTALITY.	CURED.	DISEASE ARRESTED.	IMPROVED.	UNIMPROVED.
Adirondack Cottage Sanitarium	Dr. Trudeau	4.16 per cent.	26.38 per cent.	30.55 per cent.	27.08 per cent.	9.72 per cent.
Loomis Sanatorium at Liberty	Dr. Stubbett .....	.....	17 "	7 "	42 "	.....
Gravenhurst Sanatorium	Dr. J. H. Elliott .....	.....	14.45 "	27.7 "	34.93 "	.....
Winyah Sanatorium	Dr. Von Ruck .....	.....	43.4 "	.....	.....	.....
Falkenstein Sanatorium	Dr. Dettweiler	4-4½ per cent.	(absolute) 14 per cent. (relative) 14 per cent.	.....	45 "	.....
Brehmer Sanatorium at Gärbersdorf	Dr. Achtermann	7.5 "	25 "	.....	50 "	.....
Sanatorium de Turban at Davos	Dr. Turban	4.36 "	40 "	.....	40 "	.....
Royal National Hospital	Dr. J. G. Sinclair Coghill	3.95 "	17.14 "	.....	61.11 "	17.76 per cent.
Nordrach Sanatorium	Dr. Walther	30 "	.....	.....	65 "	.....

TABLE II.

TWO HUNDRED AND THREE PATIENTS WHO REMAINED IN THE ADIRONDACK COTTAGE SANITARIUM AN AVERAGE TIME OF NINE MONTHS.

CONDITION OF THE PATIENTS WHEN ADMITTED.	APPARENTLY CURED.	DISEASE ARRESTED.	IMPROVED.	UNIMPROVED OR FAILED.	DIED.
75 incipient cases	55-73½ p.c.	16	2	2	0
84 advanced cases	15	38	19	11	1
44 far advanced cases	0	7	19	13	5
203	70 (34.48 p.c.)	61	40	26	6

AN INTERESTING CASE OF STRANGULATED MECKEL'S DIVERTICULUM.

BY

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M. H., a boy of 13 years of age, was sent to the Montreal General Hospital on December 10th, 1898, for operation, a diagnosis of strangulated inguinal hernia having been made by the physician attending him previous to admission.

History of the Present Illness. The patient was in excellent health until December 2nd, eight days before, when, on his way to school in the morning, he was suddenly seized with a severe pain in the abdomen, so severe that he was forced to return home feeling very weak and sick at his stomach. Rest in bed gave him some relief and his condition appeared to improve somewhat during the following night. A purgative was administered and the following day his bowels moved slightly. During this time and up to the fourth day of the attack (four days before admission to the hospital), the pain was chiefly confined to the lower right quadrant of the abdomen, and during this same period his bowels moved in all three times, the character of the stools being somewhat constipated. For the last four days there had been no motion. Vomiting was present from the second day on and the morning of admission was noticed to be of a dark brown colour. Four days ago the pain became more general, and along with this change the surface of a small mass in the inguinal canal became inflamed and very tender.

Present Condition. The patient is a poorly nourished youth of 13 years of age, very restless, but not at all delirious. The face is flushed, the malar arches prominent, the eyes sunken, lids partly closed, expression anxious, lips covered with sordes, tongue dry and covered with a dark brown deposit, and the breath foul. The temperature is 101.5° F., pulse 86, respirations 20. He prefers to lie in the dorsal position with the thighs flexed on the abdomen.

Abdomen. The superficial veins of the abdomen are prominent. There is a marked distention and rigidity of the abdominal muscles. In the right inguinal canal there is a mass about the size of a walnut, the surface of which is inflamed. Tenderness is present all over the abdomen, but especially over this mass. The percussion note is low-pitched tympany (tympanities) except over the mass described, which is dull. The liver dulness is completely obliterated.

Examination of the scrotum shows absence of the right testicle and the mass felt was thought to be the undescended testicle in the inguinal canal.

Operation. The patient was anaesthetised with ether and an incision made over the mass in the course of the inguinal canal. The subcutaneous tissue was found hyperæmic and the bleeding points were secured. The aponeurosis of the external oblique and the internal oblique muscles were then divided. The tumour was found to consist of an inflamed mass about the size of a walnut, firm to the touch, and adherent to the surrounding tissues. It was impossible to dissect out the spermatic cord on account of the adhesion, so the tissue was ligated



FIG. I. Shows the strangulated gut lying behind an undescended testicle. Right half of scrotum empty.

above, *en masse*, and the testicle removed. Portions of gangrenous tissue, some of which presented the appearance of having a covering of peritoneum, were found adherent to the walls of the canal. The bowel was found to be completely sloughed across and only about a half inch of gut could be secured and but one lumen made out. For further exploration, a few fibres of the transversalis muscle were snipped with scissors, and on then pulling out the portion of bowel a little more, it was found to join the intestine at right angles and to allow a probe, introduced through it, to be passed up and down the course of the bowel. (See the drawing.) The condition was diagnosed as a strangulated Meckel's diverticulum under an undescended testicle. The gan-

grenous ragged edge of the diverticulum was removed and the edge was then invaginated by a double row of Lembert sutures (silk). The parts were swabbed with carbolic solution 1 to 20, followed by a 1 to 40 solution, and the intestine returned to the abdominal cavity. A considerable quantity of pus was found in pelvis and lower abdomen. A drainage tube and iodoform gauze were inserted, the divided portion of the transversalis was sutured, and the internal abdominal ring and the inguinal canal obliterated by suturing the conjoined tendon to Poupart's ligament with an interrupted cat-gut suture. The external oblique was sutured with a continuous cat-gut suture and the skin incision closed with silk-worm gut. As each layer of the abdominal wall was sutured the parts were swabbed with 1 to 40 carbolic solution. The wound was then dressed with boracic acid and dry dressings, and a pad of absorbent cotton affixed by adhesive plaster.

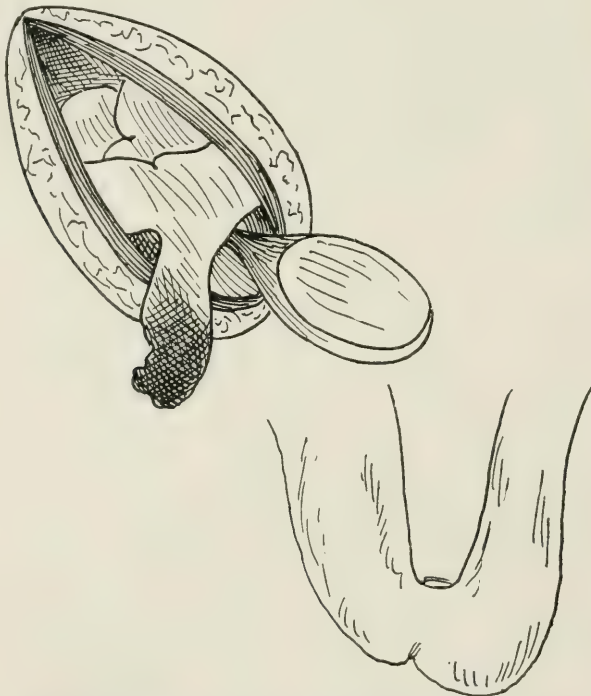


FIG. II. Shows the strangulated gut, freed and drawn down, to be a Meckel's diverticulum.

After-Treatment. The patient came out of ether quietly, with no vomiting. Champagne $\mathfrak{z}$ ss., and strychnine gr. $1\frac{1}{60}$, were given every four hours. At 2 a.m. a saline enema of one pint containing ten minims of tincture of digitalis was administered; the temperature was then 100°F .

At 6 a.m., a nutritive enema of peptonised milk ℥ii, one egg, somatose ℥i and brandy ℥ss., was retained. At 8 a.m., the temperature was 102 4-5°F., the pulse 112, and the respirations 36. Vomiting came on again about 10 a.m. and was of a dark brown colour. A nutritive enema given at this time was only partly retained. A subcutaneous injection of normal saline was given at noon. Ice bags were applied to the abdomen from the time he came out of ether until he died at 2.15 p.m.

The wound was dressed at 10 a.m. and again at noon. A slight discharge of bloody pus was found in the dressings and drain, down which a strip of iodoform gauze was passed to act as a capillary drain.

Synopsis of the Pathological Report. Adhesion had taken place at the point of the invaginated intestine; the suture line was perfectly closed. There was present, acute purulent peritonitis, dilation of the stomach and upper intestine, chronic thickening of the ileum and mesentery in the neighbourhood of the diverticulum, chronic catarrhal gastritis, and right broncho-pneumonia.

By a reference to the diagram it is easily seen how the bowels could continue to act after the diverticulum had been strangulated. This fact probably explains the difficulty experienced in diagnosis and the long delay—eight days—in bringing the patient to the hospital.

JOINT INFECTION IN TYPHOID FEVER*

BY

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Of more than usual interest have been a few cases which have come under observation within the last year. These represent a condition concurrent with or a sequel in the convalescence from typhoid fever. Although the lesions due to typhoid are many, in this paper joint affections only, will be considered, being of special interest to the orthopædist, on account of the deformities accompanying them—the necessity of forestalling these when their liability to occurrence is shown by pain, swelling or some other feature drawing attention to the joint,—and of correcting and re-establishing their usefulness when the deformity of the joint has already occurred.

Although the typhoid bacillus, the bacillus of Eberth, has been found in the joint fluids in a few instances, it is not usually—besides, typhoid joints have been seldom examined post mortem and there are very few records of bacteriological examination,—and these have been either negative or reveal the presence of pyogenic organisms. Prof Keen recounts a number of interesting cases with regard to this point. Orloff injected cultures into joints of dogs and rabbits and reported that this was followed by swelling in twenty-four (24) hours, with hæmorrhage into the synovial membrane. A thick, tenacious, turbid fluid was produced in the joints which later became purulent. There were found no pus corpuscles, but, in the earlier days after the infection, typhoid bacilli. This may explain the impossibility of finding the bacilli in joint affections in man, at least in some cases;—"having done their malignant work they have disappeared." Though we are still ignorant of the bacteriology of joint effusions, from analogy we may conclude their primary invasion of the bacilli, then disappearance. "The irritation caused by the bacilli or their toxins will readily account for the slow, but steady accumulation of fluid in the joint." (Keen.)

When the pyogenic bacteria, staphylococci and streptococci, are present we have what is called mixed infection, and where abscesses result the typhoid bacillus is found more about the walls of the abscess cavity than in its contents. The fact of joint affections so often being found in or after typhoid at shorter or longer periods, is presumptive evidence that if not responsible directly for the joint inflammation, the typhoid bacillus is strongly contributory to it, in lowering the general resistance and allowing infection by other forms of bacteria to occur. This con-

* Read before the American Orthopædic Association.

dition may be induced by slight injuries, the use of the joint when in a weak condition predisposing a favorable state for the attack of the bacillus. Case three (3) shows the pain and joint trouble coming on five (5) days after rising from bed apparently recovered.

What is the nature of the joint trouble? We are familiar with the frequency of periostitis most commonly, and osteomyelitis in the bones following typhoid, but the exact nature of the joint affection is not well understood. Sometimes the joints are infected by an extension into them of the above-named conditions, still primary infection is the rule.

Prof. Keen, of Philadelphia, whose recent work, "Surgical Complications and Sequels to Typhoid Fever," embraces a chapter on Joints, has contributed the most complete and exhaustive treatise on the subject up to the present time. He also sums up the literature most comprehensively, and the clinical classification which he makes is a very satisfactory one. He speaks of typhoid arthritis proper, and, besides this form, rheumatic typhoid arthritis and septic typhoid arthritis.

The rheumatic variety is well illustrated by:—

CASE I, F.Q., æt. 12, M.G.H., exhibits multiple ankylosis, commencing late, one year, after an illness, possibly typhoid. As a child of seven she received a kick in the ankle, in the month of May, it was stiff a few days only; as late as August no sign of trouble, then joint began to swell: in two months knee of same side was involved, and contraction began to take place. Was put in plaster of Paris, remained some time, and when it was removed was said to be all right. Then some time afterwards, namely, four years ago, the other foot and knee gave trouble and both hips. She was put on an extension and kept straight on a wheeled carriage for a year and a half, then allowed to sit up, when spine, shoulders, elbows and wrists were found involved. She came under my charge in the Montreal General Hospital last spring, after being without treatment for some four months, during which time she was allowed to sit up in a chair, and from this bad position became much deformed, flexions of knees, hips, elbows, wrists, spine and neck, the ankles also. There is strong fibrous ankylosis in these positions and pain on attempted passive motion, but no osteophytic growth nor apparent eburnation of the joint surfaces can be made out. By Bilioth splints and traction in line of deformity on a frame, nearly all the deformity has been overcome, but ankylosis persists and forcible movement sets up fresh arthritis. We have used the hot air baths for some months up to 325°F., but stopped them as no appreciable benefit was observed. The patient is in good health otherwise.

Typhoid arthritis proper, illustrated by cases two (2) and three (3).—This variety may be either poly or mon-articular, the hip being the joint usually attacked in the latter instance, and being the most serious in its results. These cases are rarely fatal and recover with very little deficiency of the joint. Ankylosis is not usual, as a result. Faulty

positions persisted in for a long time after the fever disappeared accounted for the ankylosis in both hips in one of the cases quoted by Prof. Keen. This was removed by forcible flexion under ether, so that in a similar case early passive motion is indicated.

The non-articular form affects the large joints, the elbow, shoulder, ankle, knee, but especially the hip. (*Cases 2 and 3.*) Early pain and incapacity, swelling, heat, and redness, although the swelling may be concealed or masked by the large muscles about the hip, and by contractions. These contractions interest us most as we have to deal with the deformities, generally after the fever has disappeared some time. The condition here is one of synovitis with consecutive arthritis, but pus is infrequent and fistulous openings rare (Keen). In only one case out of forty-one given by Keen in his second table did suppuration occur, and that was in the knee. Dunin's case, also quoted, in which there were abscesses of the buttock and hip, many furuncles, and suppurative otitis media, with arthritis of the right elbow and shoulder, but these joints did not suppurate. In this class of cases useful joints generally result. (*Cases 2 and 3.*)

As to frequency in typhoid of these joint troubles; it is not great. In the literature of the last fifty years, Keen has collected in all eighty-four (84) cases involving the joints in which, he says, spontaneous dislocation occurred in forty-three (43). Forty (40) in the hip; twice (2) in the shoulder, and once (1) in the knee. So that fully one-half of all cases of typhoid arthritis were followed by spontaneous dislocation, nearly all of which were of the hip joint.

Dislocation is a most important feature in this form,—it is similar to that found in exanthematic arthritis, Charcot's joint, etc. The cause of dislocation is a subacute synovitis distending the capsule, which reinforced by the Y ligament anteriorly, gives way, or stretches posteriorly, then stretching of the ligaments from this same cause occurs, and filtering of the fluid between the articular surface. After the subsidence of the inflammation on account of the looseness of the capsule, and, perhaps, of the thickening of the gland at the bottom of the acetabulum, the muscles by contraction will dislocate the joint, or it may be turned out by any small force, as turning in bed. Iliac is the usual form, but two obturator dislocations have been reported. As to sex:—of thirty-five (35) cases, nineteen (19) were males and sixteen (16) females. Age, thirty-two (32) out of thirty-five (35) occurred before the twentieth (20th) year. There is a very marked analogy to coxalgia and diagnosis is important. The treatment of these cases is simple, if early, but late is sometimes very troublesome. In seventeen (17) cases reduced, thirteen (13) were by manipulation, two (2) by both. In eleven (11) cases reduction was not effected. If one finds pain in the joints in a case of typhoid one must use every precaution. Rest! Position in abduction and external rotation, sand bags and mild extension are recommended

by Keen. If effusion is great aspirate strictly antiseptically. If pus is found open up and treat antiseptically. Sometimes necrosis is found.

The third class of case is that of mixed infection—due to infection by typhoid and pyogenic bacteria. This condition may be very serious, indeed. Infection may take place from bed sores (*Case 4*), boils, ulcers, and even typhoid ulcers themselves. It is usually poly-articular; the symptoms are those of acute suppurative arthritis, but more severe. Death may occur from septic absorption within a few days, or rigors and a succession of chills be experienced, high temperature 105° and 106° , bounding pulse soon becoming weak, tongue dry and brown—Sordes, delirium, and death from poisoning. This requires most vigorous treatment. Free incision and drainage to save the joint and life—and the earlier the better. If the synovial membrane is not all destroyed a certain degree of motion may be re-established. In mild cases, elevation, with cold and compression, light diet and bowels kept open, with rest is sufficient.

Differentiate this condition from other forms of joint trouble, such as simple arthritis, suppurative, pyæmic, puerperal, exanthematic, urethral, gouty, rheumatic, osteo-arthritic, tubercular arthritis, and senile tuberculosis. The flexions in these cases are due to reflex contraction of muscles due to joint irritation. The typhoid bacillus infections are usually late, the mixed early in convalescence.

CASE II. A. J., 19, student, taken ill with typhoid fever, Jan. 2nd, this year, delirium three weeks, then progressed favorably for a time when the high temperature recurred, of an intermittent type. He became convalescent and got up and about in two weeks, when he had to take to bed again with pain in the right hip joint and flexion of the thigh upon the abdomen. Rest in bed one week only, with the use of hot water bag brought about a subsidence of the pain and the contraction relaxed. Pain was referred to the right thigh and testis, although no inflammatory trouble existed in the latter organ. Is now up and about again (May 1st), but still has contraction of right hip joint—cannot be extended beyond 180° .

CASE III., J. de S., æt. 11. On Jan. 23rd, this year, was called in consultation to see a young girl who had typhoid fever, a mild attack, commencing October 3rd last autumn. She remained in bed two weeks, was then allowed up and after five days complained of a sore leg, returned to bed and then drawing up of the limbs took place—both lower extremities—this continued up to the time I saw her. She then lay in the recumbent position, hips and knees flexed, hips about 90° , knees about 45° , left adduction marked, with abduction of right thigh, apparent shortening of left thigh two inches, rather greater than the adduction should indicate. Tenderness in the region of the left hip was great

and not marked in the right hip or knees, which were rigid, but movable. She was very apprehensive. Chloroform was given to more fully examine the joint and it was moved about rather more than was necessary or advisable. Under the anæsthetic the limb could be fairly well moved through a limited range of motion, thigh flexed on abdomen and extended to 135° about, excluding any great degree of dislocation, although such presented itself to my mind, by the position and measurement of the limb. Nelaton's line was from $\frac{1}{2}$ to $\frac{3}{4}$ inches below the border of the great trochanter; but in the flexed position there might have been a slight error; however, dislocation was suspected, at this time. Another feature of this case was the presence of a muscle tumor or hæmatoma in the anterior femoral region, just below Scarpa's triangle. Typhoid joint was diagnosed, and treatment by extension in the lines of deformity advised. While preparing the Bradford frame, and upon return visit, the thighs were found drawn up upon the abdomen, and the left hip markedly tender and painful, due to the movement in examination, proving to myself joint affection as the cause, the increased flexion being due to muscular contraction consequent on the aggravated synovitis or arthritis.

Treatment was applied (aspiration was opposed by the parents), extension by weight and pulley was applied to both thighs in the line of deformity, by means of a scaffold over the bed, and elastic traction by rubber tubing and ankle boots, attached to end of the Bradford frame on which the patient was placed. The synovitis or arthritis subsided nicely and the contractions relaxed rapidly until on the 9th Feb., two weeks later, the temperature was normal, pulse 80, the thighs about 135° , knees 90° . A double inclined plane with joint at the knees was then attached and traction continued both from thighs and legs, with weight and pulley, until both limbs came down quite straight as far as knees and hips were concerned. The adduction of the left thigh, however, was obstinate, but was overcome somewhat by traction and counter extension. It was then easily seen that the left limb was the shorter, and with the anterior superior spines as points of measurement, the left was $\frac{3}{4}$ inch shorter than the right. Was this subluxation or absorption of the head of the bone? The child being very nervous and apprehensive and much indulged, it was impossible to make examination by manipulation until almost the present time, but Nelaton's line relation to the trochanter still remained the same, $\frac{3}{4}$ inch difference, passive rotation was not possible, indeed absolutely opposed or impossible so that no arc or rotation could be estimated to compare with the other hip. Tenderness still remained, but was very much relieved.

The tendency to adduction, and knee flexion, foot inversion, confirmed my original suspicion of subluxation and the X ray picture of to-day, May 28th, shows such to be the case, the head of the bone lying up on the ilium.

The further treatment of this case is being carried out by a double Phelps hip brace until all tenderness in the joints has disappeared, then passive motion, massage and frictions will be adopted.

I shall make an attempt to replace the left hip joint and trust it may be successful.

The right ankle in this case early showed signs of trouble, and was put up in a plaster of Paris case at right angles. This was removed after three (3) weeks, but still rigidity and tenderness remained, and it was put up again and left until three (3) weeks ago, when it was removed. There was no pain nor tenderness on manipulation, but rigidity persisted, and pointing of the foot from the contraction of the strong posterior tibial group. After the ankle has been in plaster some time, and the consequent slight deformity corrected, a splint was applied to prevent recurrence until the anterior group of muscles can hold their own.

Inflammation of the interphalangeal joint of the great toe, right side, also occurred, but subsided through rest and use of a splint. The child can now move the right hip voluntarily fully 30°, the left limitedly about 10°, both knees slightly. Another feature in this case was the peculiar infiltration and tenderness (deep) with œdema about the knee joints; both taking it on some distance above and below the joint. It was hardly a periostitis, but osteo-myelitis was suspected and feared. The involvement of the two knees did not occur at the same time, but followed on each other, and became so serious a matter that to secure rest they were put up in plaster for three weeks, by which time the trouble subsided. It occurred to me that attempted motion of the joint might have been the determining cause. Perfect motion is expected in all the joints but the left hip, in which I trust a good result also will be brought about.

Septic Typhoid Arthritis.—

CASE IV. A. M., æt. 19, was admitted to Dr. Armstrong's ward, Montreal General Hospital, May 11th, 1897. Had had typhoid fever some three months previously, been treated in a hovel in the country and came into the hospital with scar tissue covering the trochanters and sacrum. Had had bed sores extensively which laid bare the bones of these parts. The left hip was ankylosed in slight flexion, the right dislocated, posteriorly, the right knee lying over the lower portion of the left thigh, both knees acutely flexed and ankylosed. In all these joints there was very slight motion. Of course, the patient was unable to stand or walk. Treatment was applied by extension, weight and pulley similarly to last case and patient walked out of the hospital on crutches on July 21st. This was evidently an instance of mixed infection and, like Prof. Keen's case, the bed sores might have been the port of entrance. The reduction of the dislocation was impossible.

Case Reports.

AORTIC DISEASE WITH ANOMALOUS SIGNS DUE TO ABERRANT CHORDÆ TENDINEÆ.

BY

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The patient whose disease is about to be reported, first came under my notice in the Out-patient Department of the Royal Victoria Hospital early in the winter of 1896. He was a well-developed labourer of forty years of age. He complained of pain in the chest, which first began to trouble him after an attack of acute rheumatism in 1893. During the three years since that illness he had felt thoracic pain only occasionally, but in July of 1896 it became more severe and frequent, extending widely from beneath the sternum to the right and left and through to the back. Dizziness was sometimes felt. He was admitted to the ward on December 14th, 1896.

In his past history the following points are to be noted. He had done much heavy work. In 1880 he had a chancre, or, at least, the available history concerning an infection at that time, would lead one to conclude it was a chancre. In 1892 he was treated for a right-sided popliteal aneurism by Dr. Shepherd (the femoral artery was ligated). In 1893 he suffered, as already noted, an attack of acute rheumatism, and about eighteen months before seeking advice, at the Royal Victoria Hospital, he sustained a severe strain in wheeling a heavily loaded wheelbarrow. It will be seen that sufficient cause for disease of the circulatory system will be found in the history.

His condition when first examined was that of a well-nourished man in a state of comparative comfort and well-being, with the complaints as above described. The skin showed signs of smallpox many years before. There was slight pallor of the mucous membranes; the sclerotics were icteroid. There was no œdema or dyspnoea; the finger nails showed slight clubbing; the inguinal glands were enlarged. There was a scar on the glans penis near the corona. The right thigh showed the cicatrix of a surgical wound made for the treatment of the popliteal aneurism, already mentioned. The lungs, nervous system, abdomen, and urine gave negative results on examination. The chief interest centred about the circulatory system. The arteries were slightly

sclerosed. The pulse was somewhat collapsing, of good tension, regular rhythm and volume. There was visible pulsation of the vessels of the neck; the carotids springing forward in systole. Palpation revealed a diffuse precordial pulsation with a prolonged diastolic thrill palpable on the right as far as the nipple line. The thrill was also palpable in the suprasternal notch, but its maximum intensity was about the third and fourth cartilages to the left of the sternum. The apex of the heart showed some displacement to the left, being located in the fifth interspace one inch outside the nipple. The transverse dulness encroached upon the left edge of the sternum. The sounds at the apex were decidedly weaker than normal; at the base one could not discover any accentuation of the second sound either pulmonary or aortic. At the apex a faint diastolic murmur and a systolic murmur were audible. In addition to these one could hear a musical murmur, diastolic in rhythm, widely propagated over the chest, having its point of maximum intensity, however, at the third left interspace. This murmur was of rather high pitch and was audible to the patient. It could be distinctly heard at a distance of from 18 to 24 inches from the chest wall, and on one occasion in a quiet room the murmur was audible at a distance of fully five feet, the patient dressed and sitting in a chair. The diagnosis of aortic and mitral regurgitation was made. Various speculations, however, were made concerning the origin of the murmur just described.

The patient was discharged, and for several months he passed from under our observation. He returned in May of 1898. About sixteen months of pretty active life with freedom from distress had been enjoyed, but in April he became very short of breath and his sleep was greatly disturbed by hideous dreams and attacks of dyspnoea. The complaints made on this occasion of admission to the hospital differed with those at first noted. Precordial pain was the prominent feature of the case at first; now he complained of sleeplessness and dyspnoea,—dyspnoea even when at rest, and sometimes amounting to orthopnoea.

Along with these allied complaints one found on examining the heart that the cardiac dulness had increased. The apex was now in the sixth space, the transverse dulness $1\frac{1}{2}$ to 2 inches greater. There was epigastric pulsation. A thrill was uncertain. The musical diastolic murmur heard so widely was of a lower pitch, yet retaining its musical quality, but was no longer audible away from the chest wall. A "to-and-fro" murmur was heard at the xiphoid cartilage.

The patient wished to go home and was discharged on the first of June. He remained in bed until October 6th, when he was finally readmitted to the hospital, where he died on the 31st of the same month. The course of the case during the summer months was marked by hæmoptysis with signs of dulness (infarct) over the right lung at the

base, and subsequent hæmorrhagic effusion, gradually increasing oedema of the extremities and body, the occurrence of hæmorrhoids, a diminution in the amount of urine with albuminuria, enlargement and tenderness of the liver with ascites, further increase of the cardiac dulness, and an occasional presystolic murmur at the cardiac apex. The musical diastolic murmur was constantly present, though not so plainly heard.

The treatment was directed towards the failing compensation of the heart, and consisted in digitalis, morphine, strophanthus, calomel, strychnine, potassium iodide, in various combinations and according to indications. The right pleura was twice aspirated. The oedema was relieved by multiple puncture of the skin under antiseptic precautions. He died very suddenly on the evening of the 31st of October.

The diagnosis of this case finally made was aortic insufficiency, mitral insufficiency with stenosis (?), myocarditis, arterio-sclerosis, secondary nephritis, right pulmonary infarct of lower lobe, and hydrothorax.

The autopsy confirmed the diagnosis with but one exception and revealed the cause of the anomalous signs. That condition which was always doubtful in this case, viz., mitral stenosis, was not found to be present and the presystolic murmur sometimes heard as compensation was more completely lost and must evidently have been the murmur of Flint associated with aortic regurgitation. But little interest attaches to the autopsy, apart from that which describes the cardiac condition.

Cor bovinum was found, the measurement being 14.25 cm. from side to side. The chambers were greatly enlarged, the right auricular walls were muscular; the tricuspid orifice admitted four fingers; the right ventricular wall was greatly hypertrophied. The mitral orifice admitted easily the tips of four fingers. The valve showed no thickening, the only abnormal condition about it, apart from the enlargement of the mitral orifice, being found in the insertion of one of the chordæ tendineæ arising apparently from a papillary muscle and attached fully one-half an inch from the aortic cusp upon its ventricular surface and somewhat to the left of the median line. Springing from the left side of the ventricle another fine tendon was seen to pass towards the muscle already described, and to join it just as it passes beneath the margin of this valve cusp as shown in the photograph. (Fig. 1.) Another shorter and somewhat coarser fibrous band united this papillary muscle to the ventricular surface at a point adjacent to the first. The aortic valve was incompetent, the cusps being greatly thickened and shortened.

The anomalous signs in this case give it the interest it possesses:—

(1) It is anomalous to find *two diastolic murmurs*. We had the high-

pitched musical murmur and the low-pitched characteristic diastolic murmur of aortic insufficiency.

(2) It is anomalous to find a diastolic thrill so widely palpable. According to Gibson,—“They are rarely felt except in the precordial region, more especially towards the lower part of the sternum and in the neighborhood of the apex.”

(3) A murmur audible so far from the chest-wall is rarely observed.

(4) With equal truth it may be said, further, that a musical diastolic murmur is an anomalous sign.

Concerning the cause of this quality of the murmur (4), we thought upon diverse possibilities, and chief among these was a condition of ruptured or distorted aortic cusp occurring in an atheromatous subject at that time when he sustained a heavy strain with an overloaded wheelbarrow. It is well known that the aortic valve segments are those injured most frequently by an over-strain, and some years ago C. Theodore Williams reported a case having a musical diastolic murmur which was subsequently shown to be due to a damaged valve-cusp, the border of which “was retroverted into the ventricle and vibrated in the regurgitant stream.” Another possibility was that some fibrous band was floating in the blood stream, one end attached, or, perhaps both ends fixed. How true this last possible condition was the autopsy has shown. It would appear that this arrangement of the chordæ tendineæ is a congenital anomaly. They may find their point of valvular insertion at the edges or upon the ventricular surface of the valve, but rarely is it found so high up. Such an anomaly was without signs while the blood stream flowed in the normal direction; once regurgitation took place through the aortic orifice the stream of blood set these cords in vibration and, under the increased tension induced by a dilating ventricle and before myocardial changes became pronounced, the musical murmur was produced. Then followed the period of dilatation with muscular changes inducing loss of tone and both thrill and murmur became less pronounced.

Aberrant chordæ tendineæ, though comparatively rare, have been observed by many writers, and in some instances a diagnosis of their presence has been made during life. H. Huchard, in the *Revue de Médecine*, 1893, describes five cases, three of which were diagnosed during life. The greater number of such cases, Huchard believes, are congenital anomalies, while but a few are due to pathological changes, principally those due to atrophy of the left ventricular trabeculæ. They are very rarely found in any other chamber of the heart. Murmurs produced by them are associated with those found in the upper part of the ventricle, and are almost always systolic in rhythm and possess a musical quality.

Another point among many in cardiac cases, which the observation of this case teaches, is that relief of cardiac pain and the agonising features incident to the disease when the heart shows moderate hypertrophy, are greatly relieved when dilatation occurs, and, then, too, the other features of the case change. If you will remember, pain was the chief feature at first, when no œdema and no dyspnœa were present and the apex was in the fifth interspace; that when he came again for advice dyspnœa was great and the apex was in the sixth interspace and œdema supervened. This point was discussed by Musser in 1897.

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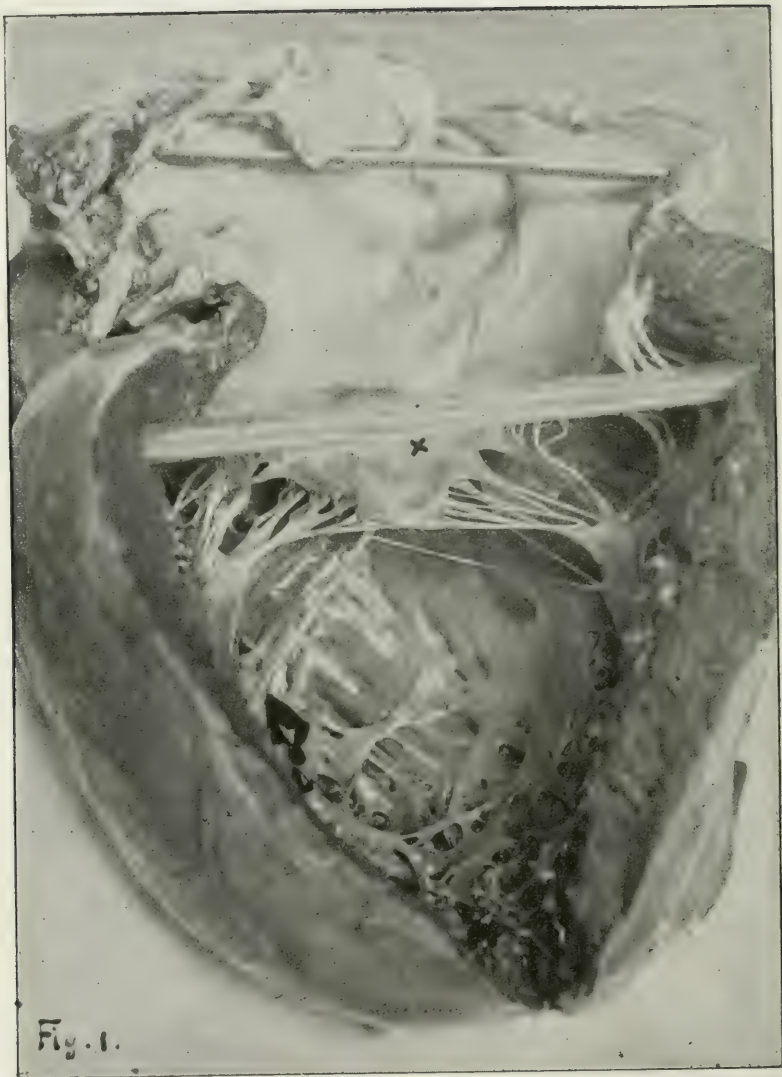
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View of Left Ventricle and Mitral Valve, with (x) point of attachment
[*aberrant chordae tendineae*].

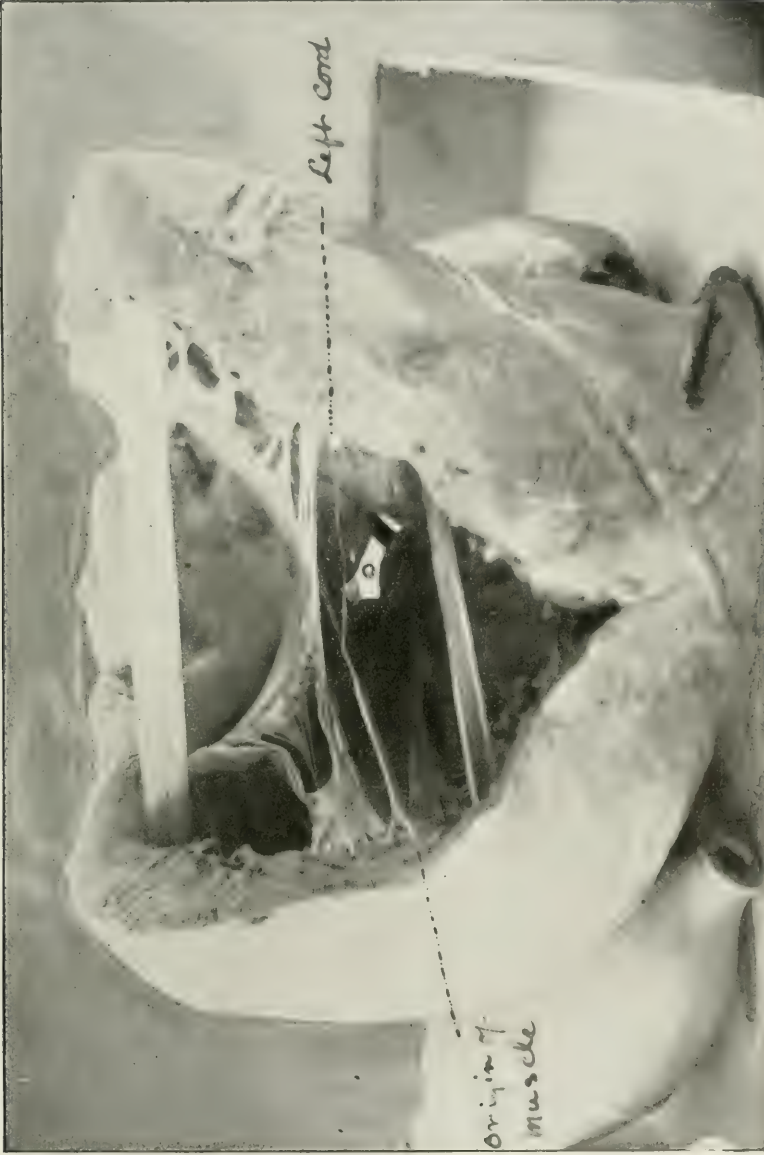


FIG. 2. - The Left Ventricle viewed from below.

O. Aortic orifice—valves incompetent.

CASE OF LACERATION OF THE INTESTINE WITH RUPTURE OF THE MESENTERIC ARTERY WITHOUT A SKIN WOUND.

BY

F. J. SHEPHERD, M.D.,

Surgeon to the Montreal General Hospital.

J. S., aged 30 years, a stout man weighing over 200 pounds, was brought to the Montreal General Hospital on May 24th, 1898, suffering from a severe injury of the abdomen. Whilst bicycling on Dorchester street he collided with the shaft of a coal cart which turned in front of him to go down Mountain street. He was, of course, thrown from his bicycle and suffered severe pain and shock. The ambulance was called and he was sent to the Hospital.

His condition on entrance was most serious, his pulse could hardly be felt at the wrist, the surface of his body was cold, and he had sighing respiration. Vomiting of large quantities of coffee-ground material was continuous and he complained of severe pain in the abdomen. There was a contusion seen immediately below and a little to the left of the umbilicus; the surface was not broken. Over this region on percussion a dull note was elicited everywhere, and this dullness extended rapidly.

I saw him an hour after admission and his general condition was much the same as that described above, the local conditions were, however, rather different, for at the site of the contusion a large subcutaneous tumour was seen, and this on palpation was distinctly fluctuating. Patient's pulse was hardly perceptible at the wrist, the whole surface of the body was cold and clammy and he was becoming very drowsy. Evidently internal hæmorrhage was going on, and immediate operation was advised and consented to.

He was taken to the operating room and ether was administered. An incision was made in the median line and on cutting through the skin I found I was in the abdomen, the recti muscles having been torn through. An immense amount of blood gushed out and also a lot of intestine protruded. The bleeding being furious, with the help of Dr. Armstrong, the deeper part of the abdomen was exposed, and then it was seen that the small bowel had been torn completely across and the rent had continued on through the mesentery down to its attachment to the spine, tearing across near its origin the superior mesenteric artery. This was the source of the hæmorrhage and the vessel was with difficulty secured. Whilst this was being done, normal saline solution

was transfused into the veins to the amount of five pints, and hypodermics of brandy were given. At the same time the rent in the mesentery was closed and the bowel was sutured with a continuous Lambert. The abdomen was then filled with warm saline solution and closed with silk-worm gut sutures.

Although comparatively little blood was lost after opening the abdomen, the man's condition after leaving the table was very alarming, he never recovered consciousness, but only lived two hours. Even had the operation been successful, the cutting off of the blood supply to the greater portion of the small intestine would inevitably have caused gangrene of a considerable part of the bowel, and thus the case was hopeless from the first. The accident is a rare one, and I do not think there are many cases reported in literature.

RETROSPECT OF CURRENT LITERATURE.

Medicine.

UNDER THE CHARGE OF JAMES STEWART.

The Influenza Bacillus and Pneumonia.

W. H. SMITH, M.D., Boston, From the Clinical Pathological Laboratory of the Massachusetts General Hospital.—*The Journal of the Boston Society of Medical Sciences*, Vol. III., No. 10.

The relation of the influenza bacillus to pneumonia is a subject that has been attracting a great deal of attention during the past few years on account of its great practical importance. There is by no means a consensus of opinion either as to the frequency or characters of the pneumonic process which is induced by the influenza bacillus. Dr. Smith's paper is a valuable and timely contribution to this end. An analysis of the post-mortem records of the Massachusetts General Hospital, made to determine the number of cases of pneumonia in which the influenza bacillus has been isolated from the consolidated areas, showed that in 73 cases of acute broncho or lobular-pneumonia, the influenza bacillus was isolated five times, while in 23 cases of lobar pneumonia it was only found once and then in conjunction with the pneumonococcus. To ascertain if the six cases of pneumonia from which the influenza bacillus had been isolated resembled one another in any particular clinically, macroscopically or microscopically, a very elaborate analysis was made of all six cases. The patients in all six cases were past middle life and were suffering from degenerative changes in the arteries or from malignant disease. The onset of the disease was not in the great majority of cases sudden as we nearly always find it to be in cases of simple pneumonia. The fever was moderate and there was but slight variation in the pulse and respirations. In no case was rusty sputum obtained. Both influenza bacilli and pneumococci were met with in one case (lobar) in the sputum during

life. The physical signs were chiefly a few fine moist rales sharply circumscribed. In only one case was there dulness with increase of the voice sounds and this was a case where several inflammatory foci were fused together.

Dr. Smith confirms the statement made by Frankel that it is not possible to diagnose an influenzal pneumonia from the naked eye appearance of the lung. The inflammation in five of the cases was lobular, but the foci were multiple and often so fused together as to bear a close resemblance to lobar pneumonia. It was common to meet with foci widely separated, one focus being at the apex and another at the base. Pleurisy was present in three cases, once as an organised pleurisy and twice as a circumscribed fibrinous exudate overlying foci of consolidation. In one of the cases where foci of consolidation were immediately beneath the pleura, softening with an abscess formation had occurred. This is important to note for cases have been reported where in the course of an influenza pneumonia a sudden pneumothorax has developed. Mosler, Fürbringer and Kundrat have reported such cases. In no case was gangrene of the lung or empyema present. The bronchi were found injected and filled with muco-purulent fluid in every case. In no case was there found any splenic enlargement.

All of the cases were characterised by an exudate of leucocytes into the alveolar spaces. Except in one case (lobar) there was a marked scarcity of fibrine in the exudate. In all, the capillaries were injected and the bronchi filled with leucocytes and often destruction of the lining membrane of the bronchi had occurred.

The following are the conclusions reached by Dr. Smith from his interesting study:—

(1) Cases of pneumonia caused by the influenza bacillus may give few if any signs clinically of their presence beyond a moderate degree of fever and a few fine moist rales, more or less circumscribed.

(2) The influenza bacillus by itself is capable of producing pneumonia; however the pneumococcus is frequently associated with the influenzal bacillus in its production.

(3) The type of the pneumonic process is usually broncho or lobular, frequently consisting of multiple foci with a tendency to involvement of the lower lobe of the left lung.

(4) Upon microscopic examination the exudate is found to be composed largely of cells, chiefly leucocytes. The amount of fibrine present in the exudate is small. Bacilli are usually present in large numbers inside the leucocytes, both in the alveolar spaces and in the bronchi.

James Stewart.

The Prevention of Valvular Disease of the Heart.

RICHARD CATON, M.D., F.R.C.P. "On the Prevention of Valvular Disease of the Heart."—*Edinburgh Medical Journal*, April, 1899.

The subject of this communication is one of the highest importance in the treatment of acute rheumatism. The writer proposes several questions which he intends to answer in this paper. "Are there no means of prevention of endocarditis?" and when it does occur:—"Can we in no way help nature to produce as complete a cure in the heart as in the joints?"

The author's methods of prevention consist chiefly in protecting the subjects of rheumatic attacks against sudden changes of body temperature by clothing them with flannel garments, keeping the patient in almost absolute rest under a treatment with mild cholagogues and salicylates and nourished with a light diet from which red meat is excluded. Blisters followed by poultices may be applied to those joints in which the pain is obstinate. The daily amount of salicylates is diminished and prolonged rest, warmth and quiet are enjoined upon the patient after the painful symptoms have subsided. By this treatment 82 or 83 per cent. of Dr. Caton's cases escape complications.

In the second place the writer addresses himself to the "arrest of cardiac valvular mischief when it has begun." He claims for the salicylates no beneficial effects to this end, but recommends the adoption of such measures found effective for a refractory joint—the use of small blisters, etc. Small blisters about the size of a shilling are applied along the course of the 3rd, 4th and 5th intercostal nerves in succession, one at a time. The patient is kept in a recumbent position for several weeks. The heart's action is kept as quiet as possible. Salicylates are continued; 8 or 10 grains of sodium or potassium iodide are given three times a day. Dr. Caton lays great stress upon the maintenance of the patient at *rest* and, after considerable experience, claims most gratifying results.

Typhoid Fever Without Intestinal Lesions.

J. H. BRYANT, M.D., M.R.C.P. "Typhoid Fever without Intestinal Lesions."—*The British Medical Journal*, April 1, 1899.

This case is reported by Dr. Bryant, of Guy's Hospital, and a brief review of fifteen similar cases is found along with it.

The patient was a male, aged one year and nine months. He showed signs of ill health in loss of flesh, diarrhoea, vomiting and febrile state. The spleen was enlarged, the abdomen distended, and signs of broncho-pneumonia were present. The blood gave the Widal reaction. The patient succumbed to the disease about the end of the third week.

At the autopsy no lesions were found in the intestinal mucous membrane. Enlarged mesentric glands were discovered and cultures taken from the glands "yielded an almost pure culture of the bacillus typhi abdominalis."

The case shows the necessity of a careful bacteriological examination and the application of the Widal test.

The Etiology of Scarlatina.

JOHN S. BILLINGS, JR., M.D. "The Occurrence of the Streptococcus Scariatinæ (so-called) in Cultures from the Throats in Cases of Scarlet Fever."—*New York Medical Journal*, June 7, 1899.

W. J. CLASS, M.D., Chicago. "The Etiology of Scarlatina."—*Medicine*, June, 1889.

The question concerning the etiology of the exanthemata is slow in being fully answered. From time to time one sees the results of series of observations upon measles, small-pox and scarlatina. And while these show different results there can be but little doubt but that an answer must eventually become quite as clear as that which applies to typhoid fever or tuberculosis. Klein, in 1887, and Kurth, in 1890, described a streptococcus which they believed to be related to the disease. Dr. Billings has recently made cultures from the throats of 17 cases of scarlet fever. He concludes, from the results found in these cultures, that the so-called *streptococcus scarlatinæ* or *conglomeratus* does not occur in the throats in some cases of scarlet fever. It is either not constantly present or in the great majority is isolated with great difficulty.

Klein made his observations from cultures from the blood of patients, Kurth observed cultures from the throat. Both were workers in the Old Country, while Billings operated in America, and thus some cause may be found for differences.

Class refers in his article to the observation of Crajkowski, who, while isolating a diplococcus from the blood of scarlatina patients, does not claim it to be the germ causing this disease; to those of Klein already mentioned in this abstract; and to those of Edington, whose work was confined to the scales of scarlet fever patients, and who, while finding many forms of micro-organisms, isolated a coccus termed by him "the micrococcus capsiformis and a bacillus which he considered to be the causative factor in scarlatina."

While examining a large number of cultures taken from the throats of various forms of angina, Dr. Class found that large diplococci were frequently present and these were most constant in those cultures taken from scarlatina throats. The germ is polymorphous, being

found as a diplococcus like a very large gonococcus in tetrads, as a streptococcus, or as single coccus. After cultivation from the scales of 74 cases of typical scarlatina, from 50 throats of scarlatinal angina, and from the blood of 16 such cases and making of control tests, Dr. Class concludes that the germ is the specific causative factor of this disease.

W. F. Hamilton.

Medical Uses of the Röntgen Light.

FRANCIS H. WILLIAMS. "An Outline of some of the Medical Uses of Röntgen Light."—*American Journal of Medical Sciences*, June, 1899.

Until very recent times surgery has claimed almost a monopoly of the benefits accruing from a use of the X rays, but to-day, thanks to the careful research of Dr. Williams and his improvements in the technique of these methods, most useful information has been obtained for the internal clinician.

Perhaps the most interesting of his observations concern the chest, with special references to diseases of the heart and lungs, more particularly pulmonary tuberculosis. Illustrations which accompany his observations show that normally during respiration the diaphragm makes extensive excursions and the heart, too, changes its place. One can see, too, by means of the fluoroscope definite differences in the brightness of the lung area between the extremes of respiration—for in full expiration the lung area will appear much darker, containing as it does, at this period, more blood per cubic inch. The fact will explain then, how readily one may detect any condition of the lungs where local congestion, etc., exists, a condition, of course, often found in early tuberculosis and in cardiac disease. The excursions of the diaphragm possess a considerable degree of importance with reference to diagnosis, and one finds normally with the fluoroscope that on the left side the average movement in the adult is about $2\frac{1}{2}$ inches and on the right side there is a still wider excursion amounting to at least $\frac{3}{4}$ inch more. When investigating for the presence of pulmonary tuberculosis abnormalities must be looked for in two directions; first, the diseased portion appears darker than in health, and, secondly, the diaphragmatic movements are restricted on the diseased side during full inspiration. It is true this can merely arouse the *suspicion* of tuberculosis, but is of considerable importance for confirmatory evidence, especially when the signs by physical examination are rather indefinite. In not a few instances, Dr. Williams has found evidence of tuberculosis when auscultation and percussion have quite failed to manifest the disease, and subsequent developments proved beyond a doubt the

presence of the malady In his opinion the shadows are not necessarily from a consolidation, but often merely from congestion, and on the other hand, it should not be forgotten that these same shadows may at times appear in the various forms of disease associated with debility, though as a rule their presence here is very ephemeral—hence the possibility of a differential diagnosis.

Cases, too, are cited where an examination for other conditions by means of X rays, revealed the significant shadows in the fluoroscope, thus suggesting for the first time the possibility of a tuberculosis. It is important, further, that pleural adhesions, so common apart from tuberculosis, do not appreciably affect the penetration of the rays, though they might naturally restrict the movement of the diaphragm. In such cases, however, no shadows whatever would appear.

Where doubts exist as to the presence of *pleural thickening* or *effusion* the fluoroscope may be used to some advantage, fluids presenting shadows against the X rays, and where free fluid exists the line of the diaphragm is obliterated. It is likewise held that by this means, too, one may know where best to aspirate the chest for the removal of the effusion, inasmuch as the most favourable site for the insertion of the needle may be ascertained.

The detection of *thoracic aneurism* when other methods have failed has long been known, and the value is more appreciated when one reads the cases cited by Williams to show the benefits. One instance is worthy of citation, viz., where cesophageal bougies were being passed for stricture which was only correctly diagnosed after employment of the fluoroscope.

In the abdomen, apart from the already much discussed subject of the detection of calculi, it has recently been demonstrated that the X rays may be utilised for determining the exact location of the *stomach*, and in addition to the work done by Williams is the interesting article by Rosenfeld, describing a unique and on the whole not very elaborate method for the same purpose. While many have given subnitrate of bismuth for the purpose of determining the lower border of the stomach (the metallic salt being impervious to the rays as it lies in the stomach), Rosenfeld has employed a stomach tube filled with shot and by other devices is enabled to determine with fair accuracy the situation of the organ.

The researches of Dr. Williams are certainly eminently worthy of careful study, and one must admit that for medical purposes the fluoroscope has undoubtedly proved a valuable agent in the confirmation of diagnosis, and that in the X rays a method has been found which is certainly on a par with much that is esteemed good in physical diagnosis.

Surgery.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

Gunshot Wounds of the Abdomen.

STEPP. "Gunshot Wounds of the Abdomen.—*Bulletin of the Cleveland General Hospital*, January, 1899.

After giving the history of a very interesting case, Stepp quotes the following conclusions of Vulliet based on the study of three hundred and fifty-five cases, seventy-seven of which were treated on the expectant plan and two hundred and fifty-eight by laparotomy.

(1) To establish the fact of penetration the wound must be enlarged, probing being insufficient. Exploratory laparotomy must be performed at once in case of perforation.

(2) It is often impossible to decide from the symptoms whether the intestine is perforated or not; symptoms of peritonitis often accompany slight cases, while they may be absent in multiple perforation.

(3) Sure signs of perforation of the intestine as fistula or evacuation of a bullet per rectum, are very exceptional.

(4) Exploratory laparotomy is without danger.

(5) Both statistics and experiments show that spontaneous healing of intestinal perforation without septic peritonitis is rare.

(6) Early operation aids in the prevention of peritonitis, which, when once established, nearly always ends fatally.

(7) Even when death does occur it need not be attributed to a long and difficult operation; it may have been due to the gravity of the lesion. Operation has certainly saved many who would otherwise have died.

(8) If there are no abdominal symptoms present forty-eight hours after the infliction of the wound, perforation of the intestine can be excluded almost with certainty; if there are signs of peritonitis abdominal section and washing can give the only remaining chance for recovery. Deaths in the latter case are due to the expectant treatment and not to the operation.

(9) Shock is no contra-indication to operating; it is often caused by severe hæmorrhage, and the fear that the patient may die on the table must not preclude an operation which has saved life. In these cases stimulants and intravenous saline injections should be given freely.

(10) The incision should be median and long in the majority of

cases as this facilitates exploration. The cavity should be washed out and drained.

(11) The above conclusions apply only in civil life where it is possible to use aseptic precautions. In war, the question of operation versus expectant treatment must be considered as still unsettled.

A Bullet Embedded in the Heart for Thirty-Seven Years.

The Dublin Journal of Medical Sciences, 1899,

A correspondent of the *Baltimore Sun*, writing from Morgantown, W.Va., asserts that a man named William B. Smallridge, who died a few days ago at Glenville, in Gilmer County, carried a bullet in his heart for thirty-seven years. He was a member of Company E., First West Virginia Infantry, in the Civil War, and in September, 1861, while marching through Gilmer County, was shot by someone in ambush, the bullet entering Smallridge's chest at the lower point of the scapula on the left side, passing thence directly through the left lung into the left ventricle of the heart. The force of the bullet was so broken that it did not penetrate the inner wall, but the regimental surgeon pronounced the wound fatal and left Smallridge to die. He did not die, however, but was sent back up the Little Kanawha river in a skiff to his home in Glenville, where he recovered and has since lived. A few weeks ago, while on his death-bed, he asked Dr. G. O. Brown to make an examination of the wound after his death. This Dr. Brown and Dr. O. B. Beer did and found the bullet embedded in the heart. The man never suffered from any disturbance of the heart. His death was due to cancer. The report is confirmed by Dr. Beer in a letter to the *Cincinnati Lancet-Clinic* of November 19, 1898.

The Treatment of Appendicitis.

SOREL. "Du Traitement de l'Appendicite."—*Archiv. Provin. de Chirurgie* 1er Mai, 1889.

The question of "how to treat appendicitis" would seem to be a very live one in France at the present time. It was the subject of discussion at a recent meeting of the Société de Chirurgie de Paris, and Professor Dieulafoy has recently stated in a communication to the Académie de Médecine that "there is no medical treatment of appendicitis." Professor Dieulafoy states that the mortality in appendicitis is large because surgery is considered a last resource and valuable time is lost during the application of medical treatment. Histories of cases are given where the surgeon has been called and operation performed only after the conditions permitting of cure have passed.

The mortality under medical treatment is stated to be 30 per cent., and under surgical treatment when adopted sufficiently early almost nil. Dieulafoy says:—"Operate in grave cases in twenty-four hours; in mild cases, in thirty-six hours;" and adds "if this formula were followed there would be no more deaths from appendicitis." Sorel is equally definite in his advice when he says:—"When called to a case having the symptoms of appendicitis it is your duty, without delay, to telegraph or telephone for a surgeon." He considers the use of ice and opium dangerous because they obscure the indications of the progress of the disease.

G. E. Armstrong.

Obstetrics and Diseases of Infants.

UNDER THE CHARGE OF WILLIAM GARDNER.

The Early Diagnosis of Pregnancy.

R. VON BRAUN-FERNWALD. "Ueber Frühdiagnose der Gravidität."—*Wiener Klin. Wochensch.*, 1899, 10.

The author extensively reviews the literature of the early diagnosis of pregnancy. He places but little reliance upon the early appearance of colostrum in the breasts, nor upon the bluish discoloration of the vulva and of the vaginal mucous membrane as early signs of pregnancy, as all may accompany other conditions. The softening of the vaginal portion of the cervix and the rhythmic contractions of the uterus are considered of no significance.

The most satisfactory signs of early pregnancy consist in the change in form of the uterus, and its softer consistency, both of which are apparent on careful vaginal examination (bimanual).

Braun-Fernwald began an investigation in G Braun's clinic in 1894 as to how early it was possible to establish the Hegar sign in pregnancy and this investigation he has been carrying on ever since. He found that by Hegar's sign pregnancy can but rarely be diagnosed before the end of the second month. The author finds the most important early sign of pregnancy is a change not only in the consistence but also in the shape of the body of the uterus, one side being thicker and softer than the other. He states that as early as the end of the first month one side may be double as thick as the other. The thicker side of the uterus is found to be soft, while the other is harder, approaching more to the consistence of the normal, empty organ. The softer, thicker part encroaches on the other smaller part beyond the middle line, and at the junction of these two parts there is a distinct longitudinal groove or sulcus, the fundus at the same time appears saddle-shaped with the shallow depression lying nearer the smaller horn. The longitudinal groove can most easily be felt on the anterior wall of the uterus.

In making the bimanual examination the author recommends that two fingers should be introduced into the vagina and separated as widely as possible, so that one finger may rest on the larger, and the other on the smaller part of the uterus. His explanation is that most probably the ovum becomes attached to the lateral wall of the uterus in the neighbourhood of a tubal orifice. By the development of the

ovum the uterus on that side becomes thicker and softer than on the other, the empty side. The sulcus, he thinks, probably corresponds to the margin of the ovum, but it may be a result of contraction set up by the stimulus of the examination, as his assistant believes that he has found that its location is changeable. He states that the inequality is so marked in some cases that the larger part of the uterus may be mistaken by the inexperienced for a small myoma. The author states that with practice pregnancy can be diagnosed early with a great deal of certainty. The earliest time he has made a diagnosis by this sign was three days after one period had been missed. He considers that by this sign it is possible to be sure whether abortion in the earlier weeks of pregnancy has occurred or not. If the sign is positive the ovum is still there, if negative then it has escaped. The existence of extra-uterine foetation is probable when other signs of pregnancy exist but this sign is absent.

In the discussion which followed the reading of the paper before the Obstetrical and Gynaecological Society of Vienna, Hübl stated that in his opinion this sign made possible a certain diagnosis of pregnancy at a much earlier period than any other sign. He regarded the sulcus as due to uterine contraction. Lott stated that he had noticed the sulcus and that he agreed with Hübl that it was probably due to contraction. Schauta stated that he had noticed the condition to which the author had drawn attention and agreed with him in his explanation of the increase in size and change in consistence in one-half of the uterus as due to the presence of the ovum. He also stated that in a case where he had diagnosed pregnancy by this sign, he later had an opportunity of examining the uterus and found that the ovum occupied the harder part of the organ, while the softer half was empty. This, he thought, corresponded to the state of affairs which made Hegar's sign possible, namely, that in the cervix more fibrous tissue existed, causing it to feel hard to the touch, while just above it, where there existed only muscle fibres, was the soft area, and above this again the hard area of the uterus in which was located the ovum. Therefore, the hard half of the uterus as described by von Braun-Fernwald, he thought, probably contained the ovum, while the soft part consisted of the soft muscular tissue of the empty half of the uterus. He thought that this sign of von Braun-Fernwald would prove of great value after it had been systematically studied and observed.

Fœtus Outside the Membranes.

DUBRISAY. "Hydrorrhœa avec Fœtus Extra-Amnioté."—*Bull. de la Soc. d'Obstet. de Paris*, Fev. 17 1899.

CH. MANGRIER. "Présentation d'un Placenta avec Fœtus Extra-Amnioté."—*Bull. de la Soc Obstet. de Paris*, Mars 16 1899.

Dubrisay reports a case of chronic hydrorrhœa where a very interesting condition was found in the placenta on delivery. The patient, a woman aged 29 years, whose previous pregnancies had been normal, became pregnant early in July, 1898. On October 30th, 1898, she noticed water dribbling away from the vagina. On examination the uterus was found as large as in the middle of the fourth month, the external os was patent, but the internal was closed. On pressing up the fœtus some of the water escaped and contractions set in, but passed away after rest. Much fluid continued to escape daily; on January 18th, 255 grammes came away. On February 13th strong labour pains set in and the child, presenting by the breech, was delivered spontaneously. It was a male and weighed three and a half pounds, and did well. The placenta was delivered two and a half hours after the child, without any difficulty. It weighed nine ounces and bore a detached cotyledon; the cord branched with two divisions inserted in the centre of the membranes. The amniotic cavity appeared as a little cap or cupola in the middle of the fœtal aspect of the placenta, and was three inches in diameter. Thus the fœtus lay outside the membranes. The pregnancy continued in spite of the fact that the membranes had ruptured and the fœtus had probably escaped in part from the ovular cavity and was probably in direct contact with the uterine wall.

Maygrier reports a case with the following history:—A laundress, aged 28, pregnant for the fourth time, entered the Maternity of the Charité on February 21, 1899. Her last period had ceased on November 16, 1898, and her pregnancy had advanced normally until February 26, 1899, when she was seized with labour pains and a small quantity of blood escaped. On examination, the fœtus was found to be alive, the fundus reached as high as a finger breadth below the umbilicus. The cervix was found to be long, but was permeable, and the vagina contained blood. The symptoms of labour disappeared and the patient left the hospital, but was compelled to return on March 10th as they reappeared. On the 14th she was delivered of a small dead fœtus, the placenta following in half an hour without accident. The placenta weighed 105 grammes and its uterine surface appeared to be normal. The membranes were complete, the opening being situated close to the edge of the placenta. On close examina-

tion the membranous sac which contained the *fœtus* was found to consist of thickened decidua and the chorion. The amnion formed a small cavity at the root of the cord and was too small to have contained the *fœtus*. The volume of this pouch of amnion was 40 c.m. cubic, while the volume of the *fœtus* was 170 c.m. cubic. The *fœtus* thus was contained in a sac formed of chorion and the decidua, and must have escaped from the amnion and existed for some time in the chorion.

Nursing by Women who have Suffered from Albuminuria During Pregnancy.

PIERRE BODIN AND CHAVANNE. "De l'Allaitement chez les Femmes qui ont eu de l'Albuminurie de la Grossesse."—*Bull. de la Soc. d'Obstetrique de Paris*, Mars 16, 1899.

After stating that the general opinion is that women who have suffered from albuminuria during pregnancy, or from eclampsia, should not be allowed to nurse their children, the authors quote Gamulin's 158 observations of women, who, having suffered in this way, had been allowed to nurse their children, without harm either to themselves or to their offspring. They then report a series of cases of their own observation. They separated their cases into two classes:—

(1) Those who were only under observation during their stay in hospital.

(2) Those who were under observation for some months after leaving hospital.

In the first class they report five cases, three of which suffered from severe eclampsia. In all the albumin disappeared before the tenth day in spite of their being permitted to nurse their infants. They conclude that in albuminurics and eclamptics nursing does not produce unfavorable effects either on the mother or on the children.

In the second class they report three cases where the albuminuria persisted for several months. They present diagrams showing that in these cases the children developed equally as well as those of normal, healthy women. They conclude that even when albuminuria persists in the urine, women should be permitted to nurse their children; that the degree of albuminuria is not affected as a rule by nursing, and that both mothers and infants should receive careful attention, and nursing should be stopped should complications or contraindications arise.

D. J. Evans.

Dermatology.

UNDER THE CHARGE OF G. GORDON CAMPBELL.

Acne Keratosa.

H. RADCLIFFE-CROCKER. "Acne Keratosa."—*British Journal of Dermatology*, January, 1890.

Crocker describes a disease not hitherto recognised as a separate entity under the name of Acne Keratosa. Four cases had come under his notice, the first in 1896, when he was not satisfied whether he had to do with an unusual form of acne vulgaris or a distinct disease; meeting, however, with three others of similar character during the past two years, one of which had already been described by Jamieson in 1896, he concludes that there is good reason to look upon it as a development of the common form of acne, but warranting a separate designation under the above name.

The disease in all the cases was of long duration, one having lasted for forty years. The lesions are described as finger-nail-sized, well-defined, excoriated patches covered with blood-stained crusts situated on the cheeks and chin, especially near the angles of the mouth. There are also numerous scars of old lesions of the same size and shape as the earlier ones, white to red in colour according to the duration. The lesions as a whole are symmetrical, taking all the stages together, but they come out singly or in very small numbers at irregular intervals, and are very persistent. They commence as a red, firm, tender lump on which a pustule usually forms and dries into a scab, or the epidermis is detached by the underlying lymph. The patient removes the scab from an irresistible desire to remove or squeeze out soft plugs, or horny, conical-like plugs about a twelfth of an inch long, which are imbedded in the skin, and give rise to great irritation, and sometimes pain and tenderness, until they are removed. This constitutes the characteristic feature of the disease. When the plugs are extracted the sore heals slowly, the whole process taking from weeks to months, and with a tendency to recur in the same place if all the plugs are not out, and in some instances to spread slightly at the periphery. The horny plugs were found, on examination by both Crocker and Jamieson, to be composed of epithelial horny cells with a few prickle cells and cell-nests. Crocker thinks they are derived from the hair follicle; Jamieson, that they arise from the sebaceous gland. The process appears to be due to

an inflammation analogous to that set up by a comedo and kept up by the horny plug until it is removed by the patient. The treatment consists in the removal of the plugs as early as possible and healing the sore by suitable antiseptic applications.

Congenital Syphilis.

GEORGE OGILVIE, B.Sc., M.B., Edin., M.R.C.P., Lond. "Congenital Immunity to Syphilis, and the So-Called 'Law of Profeta.'"—*The British Journal of Dermatology*, February and March, 1891.

Ogilvie, in a communication to the same journal in 1897, summed up the present knowledge of this subject in the following propositions:—

"Clinical evidence tends to show that healthy children born of syphilitic *mothers* during the *secondary* stage, may receive a *transitory* immunity to syphilitic infection."

"No facts exist to show that a child born of a mother suffering from *tertiary* syphilis receives any degree of immunity."

"No proof exists that a syphilitic *father* ever confers any degree of immunity upon his healthy offspring."

Dr. G. Archdal Reid states practically the same in the *Lancet*, 1897, when he says that:—"While a man can never confer immunity on his children, or a woman on children born to her before infection, or after recovery, a woman can confer immunity on offspring of which she is pregnant during her illness."

In an historical survey of the subject, Ogilvie shows that Friedrich J. Behrend, in 1860, pointed out that a woman suffering from general syphilis and bearing a healthy child does not communicate the disease to it by suckling. Guiseppe Profeta, in 1865, declared that the healthy offspring of a syphilitic mother could be suckled by her or by a syphilitic wet-nurse with impunity, whether the infection of the mother took place before or after conception. The immunity of the child, however, he concluded, passed off during later life, the duration during which it existed being not definitely stated. Profeta's argument was based on the assumption that the utero-placental circulation exposed the child in the highest possible degree to infection, and that its failure to take the disease in utero was evidence of a "constitutional indisposition to contract the disease." Since then the original statement of Profeta has been considerably widened until of late years it is often referred to as "The healthy offspring of syphilitic *parents* are immune to syphilitic infection."

E. Finger believes that the immunity may also be inherited from parents who are in the stage of late syphilis, basing his belief on a case in which a son, born eight years after his father had contracted the

primary lesion, was apparently immune, although exposed repeatedly to infection during his student days. This is insufficient evidence, several cases being quoted by Ogilvie to show that even in individuals without the presumed immunity derived from syphilitic parents, repeated exposure without infection is by no means unknown. In one case reported by Blondel, a young man, twenty years of age, failed to contract the disease after repeated exposure, but eight years later contracted a chancre, followed by a most intractable syphilis.

Opposed to these observations, there are numerous instances recorded in which the children of parents suffering at the time from well-marked tertiaries due to a syphilitic infection contracted before marriage, have contracted a syphilis often of a most severe form, the syphilis of the father seemingly not producing even a milder infection in the son. Ogilvie himself met with a case in which the son's acquired syphilis proved more intractable than that of the father and, in all, he has collected some sixteen cases, one of which may be referred to at length. In a case seen by Düring, both parents had had syphilis, in all probability before marriage. The first confinements ended in abortion; next came several syphilitic children, and finally a son, who, as far as could be ascertained, presented no syphilitic manifestations in infancy or childhood. At the age of 21 he acquired syphilis, and his disease was far from being a mild one in spite of treatment during a period of three years. Ogilvie concludes, then, that "the part of the so-called 'Law of Profeta,' which refers to paternal syphilis, is a theoretical cobweb, swept away by every-day practical experience."

On the other hand the influence of the mother in transmitting immunity or partial immunity to her offspring receives more support, but here again the evidence which exists in its support refers to mothers, who, at the time of confinement or later, have infectious or inoculable symptoms. That a woman without any local infectious lesion of the breast should not infect her offspring in suckling, even though she may have infectious lesions of the genitals or elsewhere, is held to prove nothing. And no evidence exists to show that during the tertiary stage of the mother's disease any influence is exerted by the mother's condition upon the child's organism. Ogilvie's analysis of the cases reported by Baerunsprung, Finger, and others, as proof of the correctness of Profeta's Law is very thorough, and shows that in almost every case the chances of infection were but slight, either through the mother having had no lesions on the breast or that she was undergoing antisymphilitic treatment, or because the child was removed from danger of infection at a very early date after its birth.

With regard to another side of the question, the possibility of the child's being born healthy and acquiring syphilis from its mother, Ogilvie gives a critical analysis of all the reported cases, and concludes that

although many of them are of doubtful value as evidence, some, at least, seem to hold their own against the most searching scrutiny.

"Infection *intra partum*," he considers, is of quite exceptional occurrence if it exists at all, most of the cases reported as such being examples of true inherited disease. "The explanation of the fact that syphilis is hardly ever, if at all, contracted by a child during its passage through its mother's genitals need not be sought in the child's immunity nor in its latent disease, if one bears in mind that the same applies to soft chancre which is generally admitted to be eminently contagious. I am aware of only one case in which a soft chancre was contracted by a child in this manner."

Ogilvie draws the following conclusions from his investigations of the subject:—

"(1) No facts exist to prove that paternal syphilis ever confers immunity, partial or complete, upon the offspring, no matter whether at the time of procreation the father is actually syphilitic or has become immune to syphilis by previous disease.

(2) No facts exist to prove that maternal syphilis in its tertiary stage confers immunity, partial or complete, upon the offspring, or that the mother's immunity to syphilis acquired by previous disease is ever hereditarily transmitted to her child.

(3) It seems certain that mothers syphilitic before delivery rarely communicate the disease to their offspring in extra-uterine life. Such contamination has been observed in some cases of postconceptional syphilis. Whether it ever occurs in preconceptional syphilis we do not know.

In *preconceptional* syphilis two circumstances co-operate towards this result:—

(a) That it is exceptional for mothers with preconceptional syphilis, who give birth to healthy viable children, to present infectious lesions after delivery from which the child's infection could be derived.

(b) That infection by nursing, after the first year, from a woman's infection, is altogether exceptional.

In *postconceptional* syphilis also two points have to be taken into consideration:—

(a) That post-conceptional syphilis is comparatively rare.

(b) That acquired syphilis appearing in the child after the second month of life may, in not a few instances, have been mistaken for congenital syphilis, simply because the mother's syphilis dated back to a period previous to delivery.

These circumstances taken altogether with the effect of timely and appropriate treatment, may explain—to a certain extent, at least—the

child's apparent immunity from infection by its mother. Whether this explanation is altogether sufficient or whether we have to recur to the supposition of immunity to syphilis in the child, I am unable to say.

The child's intra-uterine immunisation by its mother's secondary syphilis is an interesting and ingenious theory not abundantly supported by facts. That such immunity seems to take place in some acute infectious diseases, either *in utero* or by suckling, does not materially enhance its probability in regard to syphilis."

Congenital Syphilis.

CAMPBELL WILLIAMS, F.R.C.S. "Congenital Syphilis; A New Theory." *The British Journal of Dermatology*, February, 1899.

Williams, in endeavouring to find an explanation of why the congenitally syphilitic child does not generally show dermal or condylomatous signs of the disease until about the eighth to tenth week after birth, was struck by the fact that this time corresponded roughly to the period intervening between the primary sore and the appearance of rashes in the acquired form, the incubation period, in other words. He thinks that cases exhibiting this delay in the appearance are usually the offspring of mothers (infected through the medium of the embryo), who have the disease during gestation in such a mild form that it does not produce any but the slightest symptoms, often recognised as syphilitic except through their amenability to mercurial treatment. While the child is *in utero* its tissues are practically a part of the mother's and whatever influence is at work in modifying or keeping in abeyance the mother's symptoms is equally potent in the child, the inference being that it is exerted through the circulatory system. When, however, the child gains a separate existence the power of resistance to the disease gradually wears out, and in the third or fourth week the symptoms of the inherited syphilis make their appearance. "It is almost as if the infant had come into the world charged with a maternal dose of antitoxin sufficient in amount to mask for a time the true state of affairs, and that its own rapidly growing tissues failed to continue its manufacture."

Williams holds that the "specific taint of infants born of syphilitic women is in direct relation to the virulence of the disease in the mother," and distinguishes four degrees:—*first*, which results in abortion; *second*, the child is born alive or dead with syphilitic manifestations; *third*, the lesions appear almost immediately after birth; and, *fourth*, when the lesions do not appear until after a period of apparent health. In the last class the manifestations may not appear for years, as eye or ear symptoms.

In the discussion which followed the reading of this paper it was shown that the same idea had been advanced by Mr. Arthur Ward some two or three years ago, i.e., that the immunity of the fetus was due to an antitoxin prepared by the mother and sent through the placental circulation, but that the child was unable to manufacture this antitoxin for itself.

G. Gordon Campbell.

Canadian Medical Literature.

UNDER THE CHARGE OF KENNETH CAMERON.

[The editors will be glad to receive any reprints, monographs, etc., by Canadian writers, on medical or allied subjects (including Canadian work published in other countries) for notice in this department of the JOURNAL. Such reprints should preferably be addressed to Dr. Kenneth Cameron 903 Dorchester street, Montreal.]

The Canadian Practitioner and Review.

March, 1899.

1. Hofrath Fuchs' Clinic, JOHN P. MORTON.
2. The Local Treatment of Intra-Uterine Sepsis, A. GROVES.
3. Local Treatment in Puerperal Infection, ADAM H. WRIGHT.
4. Cardiac Neuroses, JOHN FERGUSON.
5. Obstetrical Methods in Dublin and London, K. C. McILWRAITH.
6. Progress of Gynæcology, A. LAPHORN SMITH.

April, 1899.

7. The Soldier and the Surgeon, G. STERLING RYERSON.
8. A Case of Acute Streptococcus Infection, W. C. WHITE.
9. Two Cases of Poliomyelitis Anterior Chronica, ALEXANDER McCAIG.
10. Twins, each with Syringo-Myelocoele, H. A. WRIGHT.

May, 1899.

11. The Astragalus in Congenital Talipes Equino-Varus, CLARENCE L. STARR.

2. 3. These two papers deal with different methods of treatment of puerperal infection. The first has appeared in this JOURNAL (March). WRIGHT says that when signs of puerperal infection appear—such as headache, relative or absolute insomnia, rapid pulse (80 or more), vague impressions of cold, elevation of temperature—treatment should be commenced at once without waiting for the grosser signs. These premonitory symptoms always appear not later than the second day. For general systemic treatment he relies chiefly on active catharsis, using

especially calomel and Epsom salts, with a view to having from four to twelve evacuations in the twenty-four hours. When local treatment is undertaken, it should be carried out in a thorough and systematic manner. Clean and inspect the vulva and vagina carefully, using a speculum, and being sure that every portion is seen. If the surface of the cervix is clean and the cervical lochia is sweet, do not invade the uterine cavity. If decomposition of clots of lochia is found in the vagina, use an antiseptic vaginal douche twice a day. If so-called diphtheritic patches are found in the vagina or on the cervix, apply once a day a 20 to 90 per cent. solution of carbolic acid, and then dust with iodoform. If sutures have been introduced for torn perineum, it is generally, or always, advisable to remove them. If portions of placenta, or membranes, or debris of any sort are found, scrape thoroughly and remove. There is no instrument so good for this purpose as the finger tip. Wash and pack with iodoform gauze. He thinks that the intra-uterine application of tincture of iron is not entirely free from danger.

4. FERGUSON describes the various cardiac neuroses, which he divides for the convenience of study into motor and sensory. The motor derangements would include bradycardia, tremor cordis, delirium cordis, tachycardia, palpitation, and arrhythmia; while the sensory derangements are limited to the forms of angina.

10. WRIGHT describes an interesting case. The mother was a healthy woman in her sixth confinement, four children are all healthy, but one was still-born at term. Labor in the case was rapid and easy. The twins both presented by the breech, and had separate membranes and placentas. Both were males and each had spina-bifida in almost identically the same position, viz., the lower dorsal region, and each was hydrocephalic. The children weighed five, and five and a half pounds respectively. The first born and weaker child lived ten days, the other three months and nineteen days. In each there were convulsive movements. The bowels and bladder acted naturally. The lower extremities were paralyzed.

11. STARR describes the pathological anatomy of the astragalus as seen in club-foot. In this deformity all the bones of the foot take part, either as an alteration of the shape of the bones, or as an alteration of their relation one to another. The two bones in which an alteration in shape is a prominent feature, are the astragalus and os calcis, and of these the astragalus shows the most change. The remainder of the bones are changed in their relation one to another; but very little, if any, change in shape is noted. On account of mal-nutrition and certain restrictions in movements the bones generally are smaller than normal, and the astragalus shares in this decrease in size.

The Canadian Journal of Medicine and Surgery.*March, 1899.*

1. No evidence in America of Pre-Columbian Leprosy, ALBERT S. ASHMEAD.
2. Asylum or Hospital—Which ? ERNEST HALL.

April, 1899.

3. Treatment of Pulmonary and Laryngeal Tuberculosis by the New Antiphthisic Serum, T.R. (formula of Fisch), with Remarks on the Etiology of the Disease, W. FREUDENTHAL.
4. Pulmonary Tuberculosis—Treatment, J. HUNTER.
5. Prairie Chicken Shooting in Minnedosa, A. J. HARRINGTON.
6. Applicability of Tesla's System of Molecular Exercise to the Cure of Disease, A. S. ASHMEAD.

May, 1899.

7. Clinical Report on Three Cases of Unusual Interest, THOMAS H. MANLEY.
8. Remarks on the Treatment of Club-Foot, Based on the Personal Experience of Three Hundred Cases, B. E. MCKENZIE.
9. The Correlation of Insanity and Crime, EZRA HURLBURT STAFFORD.

8. MCKENZIE describes the treatment he followed in three hundred cases of club-foot. In more than two hundred, or forty per cent., there was deformity in both feet, and twenty-seven per cent. had traumatism or paralysis or other disease as the cause of the deformity. From his experience he considers that the prognosis in ordinary non-paralytic club-foot is good. In children restoration to form should be perfect, and function should closely approximate the normal. Restrictive methods, either by dressings or apparatus, should be as little employed as possible. Persistent manipulation improves function and development. Operative treatment must be thorough. No part of the correction of deformity should be left, hoping that mechanical means will complete the work. Intelligent and long-continued after-treatment is essential to a final good result. Properly constructed boots should be worn and the foot retained in the corrected position at night. Age is no bar to successful treatment, eminently satisfactory results may be obtained in adult life. Even in the case of adults the more heroic methods of operation in many cases are not called for. The prognosis in paralytic cases will vary according to the nature and degree of paralysis.

The Canada Lancet.*March, 1899.*

1. Congenital Dislocation of the Hip, B. E. McKENZIE.

April, 1899.

2. Recent Advances in Brain Surgery, HENRY O'NEILL.

May, 1899.

3. Abstract of an Address on a Proposed Scheme for a Dominion Medical Council, T. G. RODDICK.

1. McKENZIE discusses congenital dislocation of the hip, and epitomizes the present status of surgical knowledge and practice upon this important subject. The dislocation exists at the time of birth. The proportion of cases to the whole number of children born is very small, and the deformity usually passes unrecognized till the time when the child is learning to walk. The anatomico-pathological conditions are quite different from those present in ordinary dislocations, the insecure relation of the femur to the pelvis causes very marked disability and limp. In children under six or seven years, bloodless and successful reduction can be effected, producing ideal results, but in cases of older children, and if more conservative measures fail in younger children, reduction and cure can be effected by incision.

Dominion Medical Monthly and Ontario Medical Journal.*March, 1899.*

1. On the Presence of Cholin and Neurin in the Intestinal Canal During Its Complete Obstruction.—A Research on Auto-Intoxication, BEATTIE NESBITT.
2. Two Months' Work in General Gynæcology and Abdominal Surgery, A. LAPHORN SMITH.

April, 1899.

3. Acne Vulgaris and Its Rational Treatment, GRAHAM CHAMBERS.
4. Traumatic Tetanus (or Lockjaw) as a Germ Disease, with Treatment by Internal Antisepsis.—Reports of a Case of Recovery in a Horse, W. R. ROOME.

May, 1899.

5. Recent Cases from Practice, Illustrating Four Types of Ovarian Cystomata, with Photographs, HUNTER EMORY.
6. Some Features of Medical Nomenclature, A. F. McKENZIE.

The Maritime Medical News.*March, 1899.*

1. Albuminuria, E. F. MOORE.
2. Arsenical Caustic Treatment of Cutaneous Cancers.—A House Epidemic of Syphilis, W. S. GOTTHEIL.
3. Two Cases of Injury to the Brain, ALEX. MACNEILL.

April, 1899.

4. Report of a Case of Probable Thrombosis of the Middle Cerebral Artery, J. A. MACKENZIE.
5. Patent and Secret Nostrums, R. MACNEILL.
6. Leucocytosis, W. L. ELLIS.

May, 1899.

7. Sterilization of Catgut, T. J. F. MURPHY.
8. Nomenclature of Disease, JACQUES BERTILLON.

3. MACNEILL reports two very interesting cases of brain injury. A young man was injured while in the act of shooting. The barrel of his gun separated from the stock, the barrel kicking backwards and the portion with the screw which connects the barrel and stock entered the cranium on the left frontal side about an inch above the orbit and three-fourths of an inch to the left of the median line. After an unknown period of unconsciousness he walked home with the end of the barrel fastened in the wound. The wound was washed and some brain matter, spicules of bone and shreds were removed. On the second day he became irrational and incoherent, but on the dressing of the wound about an ounce and a half of brain matter came away, and he regained consciousness and seemed all right. He made a perfect recovery.

The second case was that of a young man in whom the blade of a hayfork penetrated the skull on the left side of the head about three-quarters of an inch from the median line and a line drawn from one auditory meatus to the other over the head. He fell unconscious and remained so for ten minutes. After regaining consciousness he tried to speak, but could not. On the thirty-second day after the injury he spoke a few words. For the first three months he could with difficulty be understood, and then could say about a dozen words. It was three years before strangers could understand him. His speech was scanning and monotonous until eight years afterwards. He could speak both Gaelic and English before he was injured, but he has had to learn English as a child would, and has remained quite ignorant of Gaelic. He could sing before the injury, but it was nearly nine years before he re-

gained the power. His right arm and leg were paralyzed for three months after the injury.

Canada Medical Record.

February, 1899.

1. Procedure in Post-Mortem Medico-Legal Examinations (continued),
CHARLES A. HEBBERT.

March, 1899.

2. Progress of Gynæcology, A. LAPHORN SMITH.

The Manitoba and West Canada Lancet.

February, 1899.

1. Tænia Echinococcus, GORDON BELL.
2. Tuberculosis in Our Milk Supply, DR. INGLIS.

1. BELL, in the laboratory of the Manitoba Medical College, fed two dogs with daughter hydatid cysts, which had been removed a few hours before from the liver of a patient in the Winnipeg General Hospital by Dr. Chown. After five weeks one of these dogs was killed, but nothing was found, either because insufficient time had been allowed for development of worms or because the scolices had been unable to obtain a hold, owing to an intestinal catarrh that the animal was suffering from at the time. The second dog was examined exactly nine weeks after being fed, when the lower part of the duodenum and the upper part of the jejunum were found studded with hundreds of mature tæniæ. They presented the appearance of delicate white filaments from 1-8 to 1-6 of an inch in length, with the head firmly fixed deep among the villi of the intestine. A stream of water failed to dislodge them and they retained their hold after being placed in a solution of formalin. Under the microscope they were seen to be formed of four segments, the last one alone containing eggs, in some of which the proscœlex could be distinctly made out. Throughout all the segments, as well as the head, clear, refractive granules were distributed, but their significance is unknown. This was the first time that the mature tænia had been seen in Manitoba, although in no part of America are hydatid cysts so frequent. There is no evidence of any case having originated in this country, they having been, without exception, imported from Iceland.

L'Union Medicale du Canada.

Avril, 1899.

1. Une Observation de Pseudo-Tabes, C. N. VALIN.

La Clinique.*Mars et Avril 1899.*

1. Eléments d'Analyse d'Urines, R. ROGER.

Mai 1899.

2. Grossesse avec Hydrorrhée Persistante Pendant Soixante Jours,
JOSEPH E. DUBE.

CORRECTION.—In "Canadian Medical Literature," in the April Number of this JOURNAL, two regrettable errors occurred. On page 288, the original contributions headed *The Canadian Practitioner* should have been attributed to *The Canadian Journal of Medicine and Surgery*. And on page 291, *Canada Medical Review* should have read *The Maritime Medical News*.

Reviews and Notices of Books.

THE PRACTICE OF OBSTETRICS BY AMERICAN AUTHORS. Edited by CHARLES JEWETT, M.D., Professor of Obstetrics in Long Island College Hospital, Brooklyn, N.Y. 736 pages. Octavo, with 111 engravings in colours and black, and 22 full-page coloured plates. Lea Brothers & Company, Philadelphia and New York, 1899.

Dr. Jewett has for years been widely known as a most successful teacher of obstetrics. His writings have shown him to be a man of keen scientific observation, a clear thinker and a brilliant author. All these good qualities are apparent in the work done by him in connection with this Practice of Obstetrics. He has associated with himself nineteen contributors, most of them being obstetric teachers in the leading medical schools.

The editor states in his preface that the work "aims to be a clear and practical treatise suited to the needs of medical classes and also to furnish in moderate compass a concise and comprehensive guide for the practitioner." His aims have been successfully accomplished, for the whole work is most admirably arranged, being clear and concise in its teaching and most scientific and thorough in its whole tone.

Part I. is devoted to Anatomy. It is well written and illustrated, some of the plates being very fine and many of them quite new and instructive. Part II. deals with the Physiology of Pregnancy. Parts III. and IV. are respectively the Physiology of Labour and the Physiology of the Puerperium.

The description of the mechanism and management of labour is very clear and concise, the instructions for case-reporting being particularly valuable. The employment of the antepartum douche is not recommended in ordinary cases and frequent vaginal examination in the course of labour is condemned. With regard to the choice of anæsthetics in labour, ether is recommended where it is necessary to induce surgical anæsthesia. It is claimed to be no less manageable than chloroform, and rather to stimulate than to weaken the uterine contractions. Chloroform is generally recommended in ordinary anæsthesia and is to be preferred in eclampsia and in tetanic contraction of the uterus. These sections are full of instruction and are well illustrated.

Part V. is concerned with the Pathology of Pregnancy. The chapters in this section on the pathology of the fetus are extremely inter-

esting and contain much that is new. The chapter on ectopic gestation is particularly valuable.

Part VI. is the Pathology of Labour. The chapters on the anomalies of mechanism by Drs J. C. Cameron and J. Clarence Webster, of McGill University, as could only be expected, form a clear, concise and in many ways quite original consideration of this portion of obstetrics.

Part VII., the Pathology of the Puerperium, contains a chapter on puerperal infection by Dr. J. Whitridge Williams, of Baltimore, which is certainly the most scientific and able contribution in the whole work. It presents the result of much original work and research. The author states that the only way in which a positive conclusion can be reached as to whether a given case is one of sapræmia or of septic infection, is by means of cultures taken from the interior of the uterus, when the putrefactive organisms will be found in the sapræmic form and the pyogenic organisms in the septic form. Full details are given as to the method to be followed in obtaining these cultures from the interior of the uterus.

Part VIII. deals with Obstetric Surgery.

The publisher's work leaves nothing to be desired and we can heartily recommend this volume as the best system of obstetrics existing to-day.

D. J. E.

ON FRACTURES AND DISLOCATIONS. By PROFESSOR DR. H. HELFERICH, of Griefswald. Illustrated with 68 plates and 126 figures in the text drawn by B. KEILITZ. Translated from the Third Edition (1897), with notes and additional illustrations by J. HUTCHINSON, Jr., F.R.C.S., Surgeon to the London Hospital. London, The New Sydenham Society, 1899.

This is certainly a very fine work on fractures and dislocations. The illustrations are works of art and are most beautiful illustrations of the text. It is concise and always to the point. It is to be highly commended. Unfortunately, it is not in the market in the ordinary way and can only be obtained by subscribers to The New Sydenham Society. This society has produced some most admirable books, and no physician could do better than to become a subscriber. The annual subscription is one guinea, to which two shillings and sixpence are added for extra postage to subscribers living on this side of the Atlantic. New members who subscribe for the current year, and not fewer than three past years at the same time, are allowed to select volumes from the surplus stock to the value of one guinea without additional payment. The number of volumes issued each year depends necessarily upon the number of members, the amount received from subscriptions during 1897 being nearly \$2,000. The publications con-

sist of translations of foreign authors which are not obtainable in English, selected monographs from foreign and domestic sources, etc. The society has also been publishing a lexicon of medical terms which is now nearing completion, an atlas of pathology similar to the well-known atlas of skin diseases published many years ago and still considered one of the most valuable of all works on this subject. Among the books to be issued for the present year, besides the one under consideration, is a fasciculus of the Atlas of Pathology, illustrating Hodgkin's disease from the original drawings (already issued). Selected Monographs from foreign sources, Sternberg's Monograph on Acromegaly, and Schlesinger's Monograph on Syringo-myelia.

G. E. A.

MANUAL OF DISEASES OF THE SKIN. With an Analysis of Twenty Thousand Consecutive Cases and a Formulary. By L. DUNCAN BULKLEY, A.M., M.D., Physician to the New York Skin and Cancer Hospital; Dermatologist to the Randall's Island Hospital, etc., etc. Fourth Edition, Revised and Enlarged. G. P. Putnam's Sons, New York and London, 1898.

This, as the title indicates, is a book designed to meet the requirements of the student in dermatology and as such presents the subject-matter in as simple and elementary a manner as is possible with anything like completeness. This is a difficult task to undertake for skin diseases which have not as yet been satisfactorily classified, but the author has produced a very systematic and comprehensive book and one that will be found suitable for the beginner. At the back of the book there is a chapter on therapeutics containing the formulæ of over one hundred different prescriptions.

G. G. C.

THE CARE OF THE BABY. A Manual for Mothers and Nurses. Containing Practical Directions for the Management of Infancy and Childhood in Health and in Disease. By J. P. CROZER GRIFFITH, M.D., Clinical Professor of Diseases of Children in the Hospital of the University of Pennsylvania, etc. Second Edition, Revised. Philadelphia, W. B. Saunders, 1898.

The second edition of this excellent book is sufficiently like the first not to require more than a notice that another edition has been found necessary from the rapid sale of the first. The work has been thoroughly revised and brought up to date in every particular and several new illustrations have been added. There is no doubt that it will continue to be in the future as in the past the most reliable guide we have for young mothers and nurses, and will also be of value to the medical student and general practitioner.

G. G. C.

ANNUAL AND ANALYTICAL CYCLOPEDIA OF PRACTICAL MEDICINE.

By CHARLES E. DE M. SAJOURS, M.D., and One Hundred Associate Editors, assisted by Corresponding Editors, Collaborators and Correspondents. Illustrated with Chromo-Lithographs, Engravings and Maps. Volume III., Philadelphia, New York, and Chicago. The F. A. Davis Company, 1899.

We have in previous numbers of the *JOURNAL* commented favourably on this most admirable work of Sajours and his associate editors. The third volume is deserving of the same favourable criticism. Of the many interesting articles special reference may be made to the following:—"Infantile Myxedema (Cretinism), by Professor Osler and Dr. Norton, of Baltimore; "Exophthalmic Goitre," by Professor Putnam, of Boston; "Goitre," by Professor Adami, of Montreal; "Dysentery," by Dr. Flexner, of Baltimore; "Endometritis," by Professor Byford, of Chicago; "Dislocations and Fractures," by Professor Stimson, and Dr. Keyes, jr., of New York; "Gout," by Dr. Levinson, of Copenhagen; "Hip-Joint Disease," by Dr. Reginald H. Sayre, of New York; "Eczema," by Professor Stellwagon, of Philadelphia; and "Hysteria" and "Hypnotism," by Professor Eskridge, of Denver. It will be noticed that these are all practical subjects and the reader in each of the papers will find the essence of the recent literature on the subject under consideration as well as the personal opinion of the writers.

G. E. A.

THE EXPLORATION OF THE URETHRA AND BLADDER. By M. TUCHMANN, M.R.C.S. Eng., M.D., Würzburg. With 26 Illustrations. London, H. K. Lewis, 1899.

This is a small book of about fifty pages well written and clearly illustrated. In the first two chapters the curve of the urethra and the shape of the bladder cavity when full and when empty are considered and the most modern teaching of anatomy given. These chapters are well worth reading. The important points in the anatomy of the parts are emphasised and the practical side always kept well to the fore. The remaining chapters are taken up in describing the introduction of forceps into the male bladder where they are made to catch the ureter on either side where it lies between the layer of the bladder wall. In this way the flow of urine into the bladder may be arrested on either side while it is permitted to enter from the opposite side and to escape along a groove in the handle of the forceps. The urine may be collected from either kidney according to the wish of the operator.

Dr. Tuchmann claims that this proceeding is almost painless and that after using this instrument for twenty-five years, he can say that he has never seen it do any harm to the parts held in the grasp of the forceps.

G. E. A.

THE ANALYSIS OF FOOD AND DRUGS. Part I., Milk and Milk Products
By **PEARMAN AND MOOR.** London : Baillieres, Tindall & Co. 1897
pp. 152.

This work is clearly intended to be a practical manual on the subject of which it treats and is written in a clear and interesting manner, the object being evidently to give routine methods of examination without pretending to enter exhaustively into any of the finer details of analysis of milk and its products. There is a variable expression of opinion of the results obtained by the Local Government Board and other Old Country workers upon the analysis of milk, and the authors make very clear that the standard of purity for milk adopted, or understood to be adopted, by the Chiefs of the Inland Revenue Department Laboratory (that namely of, total solids, 11.25 per cent., fat 2.75 per cent., solids not fat 8.5 per cent.), is evidently founded upon the poorest quality of milk that has been known to be yielded by cows. This certainly is not fair for the purchaser who may reasonably demand that the article supplied to him be of the average quality and not materially below it. The standard recommended in Canada is distinctly higher (fat 3.5 per cent., solids not fat 8.5 per cent., and total solids 12 per cent.). The danger of having a low standard may be regarded as a great temptation, especially among the larger milk contractors, to bring the high quality of the milk down to the level of the standard by means of the addition of water or skimmed milk.

Following upon a very satisfactory consideration of the analysis of milk and milk products is a chapter upon the bacteriology, so short as to be neither the one thing nor the other.

There is a very good and full series of tables of analyses of condensed milks, interesting as condemning a large number of highly advertised condensed milks which as shown by this analysis are clearly not prepared from the whole milk. In this as in the other sections upon butter and cheese there is much information of interest not only to the medical man as such, but to the practitioner interested in the development of one of the most important industries in this country.

- J. G. A.

HYPNOTISM AND ITS APPLICATION TO PRACTICAL MEDICINE. By
OTTO GEORGE WETTERSTRAND, M.D., Member of the Society
of Swedish Physicians at Stockholm. Authorised Translation
(from the German Edition) by HENRIK G. PETERSON, M.D.,
Boston, Together with Medical Letters on Hypno-Suggestion, etc.
New York, G. P. Putnam's Sons. Montreal, W. Foster Brown.

We are pleased at the appearance of this standard work in the English language. Of all works on hypnotism it is the most practical,

and any one desirous of being made acquainted with the application of suggestion in practical medicine will find in these pages all that is necessary for clear and comprehensive grasp of the subject. The translation reflects credit on Dr. Petersen.

J. S.

ACROMEGALY. An Essay to which was awarded the Boylston Prize of Harvard University for the year 1898. By GUY HINSDALE, A.M., M.D., Assistant Physician to the Orthopædic Hospital and Infirmary for Nervous Diseases and to the Presbyterian Hospital, Philadelphia. Reprinted from *Medicine*, 1898. Detroit, William M. Warren.

This is the most complete essay in English on Acromegaly. It represents a great amount of painstaking work and will likely remain for many years the most valuable work of reference on this rare but very interesting disease. The illustrations are numerous and well executed.

J. S.

NERVOUS AND MENTAL DISEASES. By ARCHIBALD CHURCH, M.D., Professor of Clinical Neurology and of Mental Diseases and Medical Jurisprudence in the North Western University Medical School, Chicago, and FREDERICK PETERSEN, M.D., Clinical Professor of Mental Diseases in the Womans' Medical College, New York, and Chief of Clinic, Nervous Department, College of Physicians and Surgeons, New York. With 305 Illustrations. Philadelphia, W. B. Saunders, 1899. Toronto, J. A. Carveth & Co.

This is a work of about 850 pages, 600 of which are devoted to neurology and the remainder, 250, to mental diseases. Dr. Church is the author of the neurological part and Dr. Petersen of the portion devoted to mental diseases. The aim of the writers was to produce a work for the medical student and general practitioner.

This work we feel confident more than fulfils the claims of the authors. The descriptions are very clear, concise, and yet full enough to meet all the wants of those for whom it is primarily intended. The illustrations are numerous and excellent.

J. S.

Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Stated Meeting, May 1st, 1899.

J. M. ELDER, M.D., SECOND VICE-PRESIDENT, IN THE CHAIR.

Janiceps.

Dr. J. A. Macphail showed a case of janiceps which had been sent to him. A report will be published later.

An Obscure Case of Varicocele.

Dr. W. H. SMITH reported a case of varicocele with unusual symptoms. (See page 452 of the June number.)

Dr. A. T. BAZIN said that the question of diagnosis was very difficult to decide. That the mass in the scrotum was due to the distention of the pampiniform plexus of veins there was no doubt, but the points in dispute were the cause and location of the obstruction to the return of the blood.

Neither rupture with effusion nor thrombosis would disappear as rapidly and completely, and it was hard for him to understand how one lax vein could obstruct another lax vein, especially when the surrounding tissue was also lax and yielding. No spasm of the cremaster muscle would produce such marked distention, and even if that were possible the spasm would have been relaxed by the anæsthetic.

The probability of a Littre's hernia being the causative factor had been mentioned, but it had been rarely seen that a hernia had obstructed the venous flow at the internal ring, but it was a mechanical impossibility that obstruction at the internal ring could cause such a tense condition of the veins in the scrotum as was here present without a corresponding engorgement of the same veins from the internal ring down; and this was notably absent.

Again, sufficient constriction to stop the blood flow would cause vomiting, the most common symptom of constriction of peritoneum—be it bowel or omentum—and this was also practically absent.

In his own mind, the speaker was convinced that the constricted point was in the scrotum, one inch below the margin of the pubic bone and immediately above the distended portion of vein, and he would like to hear some theory satisfactorily explaining how the constriction was brought about.

The Prevention and Cure of Tuberculosis.

The adjourned discussion on this subject was continued.

DR. W. F. HAMILTON said:—Among the papers read upon the subject of tuberculosis, that on the early diagnosis of tuberculosis in man is of greatest importance. An early diagnosis of the disease is absolutely necessary if the patient would be cured, and it is of great importance if others not yet infected would be protected.

The incipient stage cannot be considered that in which deficient expansion is present and much less that stage in which even the slightest signs of infiltration are apparent. There are those who urge the making of the diagnosis of incipient tuberculosis in what might be called the pre-expectoration stage. This seems impossible, as infiltration may be well advanced before any sputum is obtained while an attack of simple bronchitis may occur in a tuberculous subject, the sputa giving no evidence of bacilli. Greater stress should be laid upon the pulse and temperature. Observations of changes from the normal in these two signs extending over some weeks, with some failure of strength, in the absence of physical signs should arouse a very strong suspicion of incipient pulmonary tuberculosis. I recollect the stress laid upon this sign by the late Dr. R. L. MacDonnell in speaking of early tuberculosis.

Concerning the use of tuberculin, I am glad that Dr. Lafleur showed how easy of application the test is, how safe to the patient, and withal, in the vast majority of cases, most satisfactory. However, there appears to be cause for exception to be taken to one of Dr. Lafleur's statements. He stated that whether the tuberculous lesion were new or old a properly applied tuberculin test would induce a reaction. Two patients at least have shown no reaction, while their bodies shortly afterwards were found to contain tuberculous deposits. One of these is reported by Northrup in his series of 61 cases, the other was a patient in the Royal Victoria Hospital, who was tested three times and failed to react. He died within a few months of chronic endocarditis and one lung and one kidney showed tuberculous deposits.

In speaking under the head of medicinal treatment one would like to hear more definitely of those drugs which are so largely prescribed in tuberculosis. All are agreed that food and fresh air are the main agents in the treatment of this disease. Nevertheless, an expression of opinion on the use of such agents as creosote, guaiacol, etc., would be of great value to many of the younger men, many of whom are called upon to treat tuberculosis where scarcely any other treatment is possible save that of drugs. Undoubtedly, speaking from my own experience, pure creosote given in increasing doses with glycerine and brandy has been followed by singularly satisfactory results in out-patient cases. One patient has taken upwards of 75 minims daily and for months expressed himself as unable to do without it. I usually prescribe a dose of two and one-half minims for the first few days and gradually increase up to ten or fifteen minims daily. A remarkable tolerance was

observed to this drug and several patients were relieved of gastro-enteric disturbances on beginning the treatment. However, we must admit that this agent does at times alter the colour of the urine and is not well borne by the stomach. A young lady was placed on this treatment on two occasions, and five minim doses thrice daily induced decidedly smoky urine and caused sensation of giddiness and nausea each time.

The early diagnosis is the most important. Fresh air in constant supply and good food in ample quantities, constitute the chief factors in treatment. The selection of a sanatorium is perhaps a point of very minor importance; indeed, it seems to me, that all these branches of the subject are insignificant compared to the *prevention of tuberculosis* and the main object of this society at this time should be the recommendation and adoption of some methods by our municipal and provincial health boards to secure to citizens more protection than at present it possible. It was in 1894 that Dr. Wesley Mills succeeded in carrying in this society a motion against spitting on the floors of street cars. That has, doubtless, been effectual in some degree. In the same year, I think it was, the Provincial Board of Health, recognising how dangerous those houses were in which cases of pulmonary tuberculosis had lived and possibly died, recommended to the City Health Board that disinfection should be adopted. It is reported that an attempt was made to carry out this most important recommendation, but that such resistance was offered that unless an unanimous effort was made on the part of the profession, the city health authorities were powerless to enforce this measure. Needless to say, it has fallen into disuetude.

The isolation of patients with pulmonary tuberculosis is impracticable,—hence the necessity of educating the people in the matter of cleanliness and of adopting again that measure which prevents the spread of the disease by house infection. Those among us who treat patients with pulmonary tuberculosis may do something in preventing the spread of this disease. It has been my practice during the last two years in the out-patient department of the Royal Victoria Hospital to place in the hands of each patient so diseased a card bearing simple instructions concerning the disposal of sputa, sleeping alone, living in the open air, etc.; urging these things in the light of importance to personal health and the health of others.

Before sitting down, Mr. Chairman, I wish again to urge this society to move definitely in the matter of the prevention of this widespread and constantly present disease.

DR. E. A. ROBERTSON. On reviewing the discussion, it appears to me that a great deal more has been said about the cure of tuberculosis than about its prevention. This is strange, for surely it is not the

most important part of the subject. I will, therefore, to-night, say a few words concerning the prevention of tuberculosis.

The disease is spread from man to man and from domestic animals to man. Our attack, then, should have two objective points:—the prevention of contagion of one human being by another, and the extinction of the disease in the lower animals.

The first object would be obtained by enforced notification to local boards of health clothed with proper authority, and by the strict enforcement of their powers; by carrying out the well known rules for the disposal of sputum and the disinfection of houses; by measures looking to the control of the infected persons; and by general measures for the protection of public health, which at present are by no means properly carried out by our local Board of Health.

The second object would necessitate the compulsory examination of cattle by the tuberculin test and the slaughtering of diseased animals. The importance of this measure cannot be overestimated as I will attempt to show by a short account of a campaign against tuberculosis in cattle commenced in 1895 by the State of Vermont

In that year the Board of Cattle Commissioners were given extraordinary powers to deal with disease in cattle, more especially tuberculosis. They were authorized to examine herds, to quarantine them if necessary, and to prevent the sale of milk or flesh of animals thought to be diseased. They were not given the right to test with tuberculin without the owner's consent, but they could bring such pressure to bear in all cases that consent would be seldom or never refused. The State agreed to pay one-half the price of animals killed.

Since February 1st, 1895, 60,000 cattle have been tested, of which number 2,390 were found diseased and killed. Fifty-five thousand dollars were paid in compensation to the owners for the work done. I consider that fifty-five thousand dollars was a very small price to pay for the destruction of 2,390 tuberculous animals with their cumulative powers of infection, and that a similar expenditure of money in this province would prove a very profitable investment.

Some interesting facts were brought out during the testing of the various herds. One especially instructive, as proving the possibility of the skim-milk of creameries being effective, I will relate.

Herds supplying a small creamery were tested. A certain number of cows were found badly diseased. In one herd several calves were found tuberculous, but none of the other animals. These calves had been fed on the skim-milk from the creamery.

We may infer from the condition of the Vermont cattle that the herds in this province, and more especially those in the townships adjacent to Vermont, are no better off. Other speakers have referred to

the difficulties of introducing such radical measures as proposed, and I am not blind to them. But no hard undertaking can be successful without a commencement, and so far, here, not the slightest effort has been made. In New York we have an example of what can be done in preventing the spread of tuberculosis from man to man. Dr. Biggs told us about it last summer. In Vermont we have a demonstration of the ease with which the tuberculin test can be made effectual, and lately in England a movement has been started for the prevention of tuberculosis which should encourage a like effort here. I think that most good would be done by imitating the association lately formed in England, and that the initiative might very properly be taken by this society, which numbers among its members a Senator and Commoner who could help along any necessary legislation.

In conclusion, I would like to draw the attention of the meeting to the frightful mortality from tuberculosis in Montreal. In 1898, 930 persons in Montreal, Westmount, Ste. Cunegonde, and St. Henri, died of the disease. In 1885, small-pox destroyed over 3,000 lives. Tuberculosis every year carries off nearly one-third as many and yet without causing any violent alarm.

Correspondence.

THE LODGE DOCTOR IN RELATION TO MEDICAL ETHICS.

To the Editors of the MONTREAL MEDICAL JOURNAL:—

SIRS,—The fact that your editorial on above subject did not bring a shower of letters throwing cold water on the suggestions therein contained, is a matter of grave importance. Do your readers look at the number in your editorial staff, and fancying the editorial to be the concrete opinion of the lot, hesitate to express antagonistic views? Or, have they become discouraged in their opposition to lodge practice? It does seem to be useless to discuss lodge practice and its demoralising effects. It has been discussed until, as you say, the subject is “threadbare,” and yet lodge doctors are to be found everywhere. It may be stated in passing that the very fact of the subject being threadbare is a proof that the profession in general does not approve of it.

We have had lodge doctors in our midst for a quarter of a century or more, and the ethics of the situation have been carefully considered and conclusions have been arrived at which are as opposed to your views as the north is to the south. You say, and you “feel certain that a majority of the lodge doctors themselves agree with you,—that the doing of lodge practice is degrading to the medical man and the profession,” and yet, according to your interpretation of the code of medical ethics, these men who degrade themselves and the profession are to be treated as men of honour and in every sense our fellow practitioners. You seem to consider it legitimate and perfectly smooth sailing for the lodge doctor to attend any member of the lodge so long as he informs the old family physician—which he seldom does—but you would not allow the family physician to act in the same way. If he is called he cannot take the case and justify himself by informing the lodge doctor of what he is doing. No; “he has no right to see the case except in consultation” with the man who “degrades himself and the profession.” The wishes of the patient are not to be considered. He must refuse to attend, although the “refusal under such circumstances would soon leave him without any practice.” You seem to be a special pleader for the lodge doctor and his methods.

Now, let us look into this lodge practice a little and see what right it has to recognition at our hands.

In the first place it is not confined to young men struggling for a practice. At a meeting of the Ontario Medical Association several

years ago the writer heard lodge practice denounced in scathing terms by a number of doctors, and so unanimous were the opinions against it, that one expected to see a resolution passed pronouncing it "infamous and disgraceful," and therefore amenable to discipline, but suddenly the discussion was quietly dropped. It was whispered about the room that the President of the Association, occupying the chair—a popular and well-to-do doctor of a progressive city—was a "dyed in the wool" lodge doctor, gathering in as many lodges as his genial manner could command. The lodge doctor, as a rule, receives a dollar per year per member for attendance and medicine. Four-fifths of them will admit that this does not pay directly. They admit that they do this work "for the sake of the practice it leads to." They subscribe to a tariff of fees fixing the general practitioner's charge for a single visit—without medicine—at \$2.00, and are glad to avail themselves of this tariff and the assistance of their fellow practitioners when they go into court to sue a stubborn and ungrateful patient; but they will attend and supply medicine for a mere pittance in order to get new patients, or, in other words, to have an opportunity to steal some patients from the family physician. Some of them try to win the family practice by a display of excessive zeal in their attendance on the lodge members. Others plead for charity—confidentially telling the mistress of the house that lodge practice does not pay unless the family practice goes with it, and that they really will be compelled to give up the lodge if the wives and families do not employ them. Others, again, adopt a bolder tone and claim the family practice as a right. Such being some of the methods adopted by the average lodge doctor, why should they not be treated as they deserve?

And now for the remedy. You suggest the drawing up of "some code which will be equitable to the man doing society work and the man who will not; and hint that the scheme may be Utopian. I should say that it is Utopian. You might as well attempt to devise some scheme which will enable sneak thieves and pickpockets to ply their trade without protest from honest men.

The laity have a perfect right to make contracts with cheap doctors, and will continue to do so as long as they can find them. So will they try household remedies, prescribing druggists, faith cures, Christian Scientists, and "Dodd's Pills," and after they have tried any or all of them they should be, and are, at liberty to send for their regular medical attendant.

Whenever *one of my regular patients* sends for me I invariably go and ask no questions. Whether the patient has been using pink pills, the prescribing druggist, or the lodge doctor, it is all the same to me; I

ignore them all, and I do not agree with you when you say that "this would be throwing open a dangerous door."

I am, Sirs,

Yours very truly,

A GENERAL PRACTITIONER.

NOTE.—The Editors of the JOURNAL disclaim any intention of taking sides in the editorial referred to in "A General Practitioner's" letter. Their object was to state the circumstances in the hope of drawing forth the opinion of the profession on the subject. They are glad to be able to publish the views of "A General Practitioner" and will be equally pleased to hear from the lodge doctor the other side of the question.

THE
Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

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No. 7.

TUBERCULOSIS.

The discussion on Tuberculosis at the Montreal Medico-Chirurgical Society was closely followed by a large and appreciative audience. We publish in our last and present numbers the papers forming the basis of the discussion, and the society is to be congratulated on listening to such a series of excellent essays on this all-important theme.

The diagnosis of pulmonary tuberculosis is now established on a firm scientific basis and its recognition need no longer be based almost exclusively on the discovery of certain physical signs at the apex of the lung, signs which, in the early stage of the disease, may be equivocal or absent. The value of thorough and frequent examination of the sputa is now very generally recognised in establishing an early and positive diagnosis, but this measure is unfortunately too often neglected. In tuberculin we have a diagnostic aid of extreme delicacy in doubtful cases. The veterinarians have long used this measure and it is to their example that we owe the revival of this practice in man. Perhaps the chief objection to the test is its extreme delicacy, and a positive reaction due to a quiescent tubercular focus may prove a source of much mental distress to the victim of the experiment. At the same time when duly weighed with other clinical features the value of this test must be regarded as a very high one.

After all that has been said and written on the early diagnosis of pulmonary tuberculosis the unfortunate fact remains that a very large number of patients drift into a comparatively advanced stage of the disease before its true nature is recognised. Even when an early diagnosis is arrived at, most patients are totally unable to avail themselves of the prolonged and expensive treatment necessary for its arrest. In this province no attempt has hitherto been made to care for the consumptive poor. In Germany this problem has been attacked by the workingmen's insurance societies, membership of which is rendered

compulsory by the Government among this class of the community. Sanitaria, supported partly by the working classes, partly by the employers, and partly by the Government, have proved an excellent remedy in the Fatherland. In a democratic country such a solution is more difficult, but it would seem only fair to ask the participators in the benefits to contribute to the cost. The sick benefit societies, assisted by private philanthropy, could surely do something in establishing sanatoria for carefully selected cases of consumption among the working classes. From a purely economic standpoint such institutions would undoubtedly bear good fruit, not only in restoring some of the bread-winners to health, but also in limiting the propagation of the disease through infected individuals.

Since tuberculosis is now universally recognised as an infectious disease, the question arises as to whether it should be treated like other infectious diseases by public health boards and notification made compulsory. Such a measure would enable the health boards to educate affected individuals as to the risk of infecting others, and would emphasise the precepts of the family physician in regard to the precautions to be taken with sputum. Then again the danger of new tenants unknowingly occupying an infected house is a very real one, and one which the public health authorities should be in a position to guard against. There can be no question that after a death from pulmonary tuberculosis the rooms occupied by the invalid should be disinfected, and this could surely be insisted on by the Provincial Board of Health.

In conclusion, the physician must remember that his duty does not end with the diagnosis and treatment of his patient's ailment. He must guard against the infection of healthy individuals, and with this end in view must play his part in teaching the public that the vast majority of tubercular patients are infected by dried sputum.

GESTA MEDICORUM.

"QUICQUID AGUNT MEDICI NOSTRI FARRAGO LIBELLI."

The Semi-Annual Meeting of the College of Physicians and Surgeons of the Province of Quebec, for admission to practice, will be held on July 5th, in the Laval University Building, Montreal.

The fifty-fifth Annual Meeting of the American Medico-Psychological Association was held in New York on May 23rd and succeeding days. It is expected that the meeting will take place in Montreal year after next.

The following appointments have been made on the resident staff of the Montreal General Hospital:—W. L. Barlow and W. W. Lynch, re-appointed. A. H. Gordon, C. T. Fitzgerald, T. G. McNiece, R. A. A.

Shore, W. A. Wilkins and W. A. Cumming were appointed from the graduating class of 1899.

At the Royal Victoria Hospital Dr. Shirres has been appointed Clinical Assistant in Neurology, and Dr. A. Bruere Chief of the Laboratory of Clinical Chemistry. C. B. Keenan, C. H. Brown, C. D. Gillies and H. B. Cushing have been re-appointed to the resident staff, and E. F. Murphy, J. R. O'Brien, F. T. Tooke and T. Turnbull were nominated from the graduating class.

It is our pleasant duty to note the marriages of two of our confreres in the city. Dr. J. C. Webster, the newly appointed Professor of Gynaecology in the University of Chicago, was married on May 26th, in New York, to Miss Alice Lusk. The ceremony took place in All Souls' Church, being conducted by the Rev. Dr. R. Heber Newton. Dr. and Mrs. Webster have sailed for the continent and will carry with them the good wishes of all for a long and happy life.

On June 1st, Dr. D. P. Anderson, Demonstrator of Pathology in McGill University, was united in marriage to Miss Amy Robinson Perry, daughter of the late Dr. H. R. Perry, of Montreal. The ceremony was performed at the residence of the bride's uncle by the Rev. Duncan Anderson, M.A., father of the bridegroom.

Dr. T. G. Roddick, M.P., has returned from an extensive tour through the Western Provinces, where he has been feeling the pulse of the profession on the subject of Dominion Registration. He states that he has met with a gratifying unanimity of opinion throughout British Columbia, Manitoba and the Northwest as to the desirability of such a measure. The only whisper of opposition was in British Columbia, where the profession, though accepting the principle of the measure, had some hesitancy about accepting a retroactive clause. They feared that it might open the door to British practitioners of the cheap diploma stamp. This, no doubt, could be arranged. All the provinces are now pledged to send representatives, with full powers to act, to the meeting of the Canadian Medical Association in Toronto this year.

The Lister Laboratory Club met on Monday, May 8th, in the Molson Pathological Department of McGill University, Dr. C. F. Martin in the chair. The following members were present. Drs. Adami, Finley, Lafleur, Webster, Martin, Nicholls, Morrow, Anderson, Bruere, with Drs. Maude Abbott, R. H. Craig, W. G. Byers, and D. A. Shirres as guests.

Dr. Adami read a paper embodying his work upon the variation of the colon bacillus. In his experiments he found that the diplococcus form which he had found in cases of cirrhosis of the liver was a variant of the bacillus coli. This was present in normal livers and kidneys so he

concluded that one of the functions of these organs was the excretion of bacteria. In experimental animals the colon bacilli injected into the circulation were taken up by the endothelium of the liver capillaries very rapidly, somewhat later by the liver cells, and ultimately were excreted in the bile. He had concluded that the bile normally possessed an inhibitory power towards the colon bacillus.

Dr. W. S. Morrow read a contribution upon the "Propagation of the Venous Pulse," being the result of an arbeit done at Breslau. He had tested the jugular vein and the femoral, There was a characteristic pulse curve for veins comprising a presystolic rise and fall, a systolic rise and a diastolic collapse. The average rate of the venous pulse was one to three metres per second. The pulse was most marked in weak and debilitated animals, the rate of propagation was greatest when the venous blood-pressure was highest. An interesting discussion followed.

Dr. F. G. Finley recorded a case of pneumothorax in which the production of gas was due to the action of the *B. coli* and *B. proteus*. The condition had apparently started in a subphrenic abscess, this was firmly walled off and communicated with the thoracic cavity by a perforation in the diaphragm. The exudate in the pleura was pus mixed with blood.

What promises to be the last appearance of the Montreal Clinical Society took place on May 4th. For several years past the society, which originally seemed to fill a necessary place, has from a variety of causes been in a languishing condition. While the officers were full of enthusiasm the rank and file seemed to have lost interest so that it has been decided to close up the affairs of the society. This was affected in a very pleasing way by the last general meeting taking the form of a supper in Elm Hall, Westmount. The idea was carried out in a very happy manner by Dr. H. M. Church, the treasurer. About 45 members were present including the following: Drs, Wm. H. Drummond, Archibald, Birkett, Blackader, G. A. Brown, E. Brown, Cameron, Carmichael, H. M. Church, C. H. Church, Evans, Finley, Fisk, Fry, Hackett, H. D. Hamilton, W. F. Hamilton, Henderson, Lauterman, Mathewson, MacTaggart, MacPhail, R. Mackenzie, R. T. McKenzie, Morrow, Nicholls, A. Robertson, E. A. Robertson, Ross, Scane, Spier, Shaw, W. G. Stewart, Stirling, Thompson, C. W. Vipond, Wylde, Wilson, White, Westley, and Webster.

Dr. W. F. Hamilton, the president, was in the chair and he was supported by Dr. D. D. MacTaggart, vice-president, G. H. Mathewson, secretary, and Dr. H. M. Church, treasurer. After discussing a happily thought out menu the chairman proposed the first toast "The Queen," which was favoured in the usual enthusiastic way. Dr. G. A. Brown then proposed "The Montreal Clinical Society."

The society, he thought, had filled a place in usefulness, being of

course primarily attended and sustained by the younger men of the profession. He was gratified at the apparent good financial condition of the society, in being able to give the members this pleasant form of meeting. He looked upon the development of a social side of the society as a move in the right direction.

"Our guests," proposed by Dr. W. S. Morrow, was received in a hearty manner. In speaking of the guest of the evening, Dr. W. H. Drummond, he very happily designated him as the "Oliver Wendell Holmes" of Canada. He felt that he voiced the unanimous feelings of the society in saying that they were all proud of their poet physician, and expressed the opinion that he was certain to be a source of further honour to the profession to which he belonged, and he might feel assured of the greatest and lasting support of his confreres in his good work. Dr. Morrow next referred to Dr. Webster's departure, a circumstance they were bound to regret, but at the same time felt that they could certainly offer him their heart-felt congratulation on his new and honourable appointment in Chicago. His friends wished him the best of success in his new field and God speed. The doctor took occasion to express the pleasure the members present felt in welcoming a French member of the profession to their midst, in the person of Dr. Laberge, representing the Civic Hospital. The speaker regretted that the physicians of the East and West End should see so little of each other.

The toast was responded to in a very hearty manner by the guests present. Dr. Drummond, on rising, was received with great applause. He thanked the members for their courtsey in giving him the pleasure of being with them; he was one of the original members of the society; in fact, one of the charter members, and he felt pleased to see its flourishing condition. Dr. Drummond then gave two of his inimitable poems, entitled "Johnny Couteau" and "Little Lac Grenier," which were greatly appreciated.

Dr. Laberge thanked the members for their cordial welcome and regretted that the doctors of the East and Western extremities of the city did not meet more frequently.

Dr. Webster in thanking the members for the pleasure they had given him in having him in their midst on such an occasion, said that he was glad of the opportunity to take a farewell of the younger members of the Profession in Montreal on this his near departure for a new field of labour. He left Montreal with the most sincere regrets, he had, during his two years amongst his confreres received nothing but kindness, and he felt that he had made many fast friends, he might in this regard mention the President of the Society with whom he had spent most of his time since his arrival in Montreal. In speaking of Chicago he mentioned that being perhaps the most Cosmopolitan city in the world, and

having no less than two hundred thousand Canadians he should still hope to hear "God Save the Queen" occasionally, to remind him of the land of his birth. Dr. MacTaggart responded for the Montreal General Hospital and Dr. Archibald for the Royal Victoria.

Our Profession—was ably proposed by Dr. Grant Stewart—who gave it as his opinion that a meeting such as the present evening afforded could only be productive of good. In looking over the work done since the days of Harvey and other early investigators, down to the men of the present day, he felt that every man should be proud of belonging to the Medical Profession. The doctor congratulated Dr. Church, the Hon. Treasurer, on whom had fallen the work organising the evening's entertainment, upon its entire success. The speaker closed by reading an extract from the address on Medicine delivered by Dr. Wm. Osler during the meeting of the British Medical Association in Montreal, in which he set forth the great height attained by the profession in the different fields of scientific research, ending with the statement, that one might well feel proud at the exalted place the Medical Profession had attained in the scientific world of the day.

"The Ladies" proposed of Dr. Nicholls in a very pleasing manner was received with well merited applause.

During the evening a musical and literary programme was presented by Drs. Fry, Scane, R. Mackenzie, H. D. Hamilton, H. M. Church, T. P. Shaw and Lauterman.

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ADDRESS TO THE GRADUATES IN MEDICINE OF MCGILL UNIVERSITY.

BY

T. G. RODDICK, M.D., LL.D., M.P.,

Professor of Surgery in McGill University.

GRADUATES IN MEDICINE—

It is my agreeable duty on behalf of my colleagues, to offer you our most cordial congratulations on your having to-day received that coveted prize—the just reward of your diligence and application—the degree in Medicine of this University.

We welcome you to our ranks at a period in the history of our noble calling when its record of work accomplished has not only given it a foremost place among the progressive sciences, but has established its claim to consideration as among the most active benefactors of the human race. We congratulate you on entering the profession when the scientific part of medicine is booming all along the line. You are just in time to take advantage of the new methods of diagnosis recently introduced, and which are being improved upon every day. Thanks to Pasteur and Lister, all your surgical procedures will be made comparatively safe, providing you carry out the technique in which you have been so thoroughly grounded. You have had exceptional opportunities for studying that comparatively new science of bacteriology, to which we owe so much. You have been doubtless, yourselves, impressed with the extraordinary contributions of this science to medical art. In fact, as you came on through your comparatively short course of study, some of the most remarkable discoveries in bacteriology have been made. The subject, however, is only in its budding stage; so that you have entered the field in time to assist in solving the many mysteries which still surround it.

Further, you have been fortunate in coming to us when our laboratories were about completed, and the facilities for practical teaching in our hospitals more than doubled.

Every one of you will then quickly take his place in that procession of able, earnest men who are striving by every means available to emancipate our profession from that bondage of imperfect theories and traditional practice which has resulted in such disastrous consequences in times gone by.

The profession you follow is second to none in usefulness, although the duties devolving upon you as members thereof are certain to be arduous and responsible. There is no profession or following which so tends to elevate and refine its followers and to make them examples of good to all men. Your future will, however, depend very much on the exercise of those qualities which are so essential to success in every walk of life. Industry, energy, integrity, and temperance in all things, are qualities which must form at least part of the foundation, if it be your ambition to build a lasting superstructure. Without these your efforts will come to naught, but possessing them, and armed with the knowledge of the principles of your profession which you have gained here, you may confidently expect to achieve a position alike creditable to your teachers, honourable to yourselves, and useful to society.

It has been customary, on occasions of this kind, to make a rather lengthened reference to the ethics of the profession; but as you have had opportunities of hearing, during the course of study, several admirable addresses on this and allied topics from members of the Faculty, I shall take it for granted that you are ready even now to exhibit that proper professional pride and dignity so characteristic of the true physician. Besides, you have ready access to the many codes which now guide the conduct of the profession in this and almost every other country. But a brief reference to one or two points in this connection may not be out of place.

So far as your relations with a confrere are concerned, above all things be charitable—be honourable. Think not of evil, far less express it. While in your keeping, guard sacredly his good name. When occasion offers, share loyally with him the responsibilities so often overpowering, and the like of which no other profession or business can ever experience. Whatever reputation you win, let it be by fair and open competition. Misunderstandings constantly arise, owing to the lack of appreciation of our code by the patients themselves. For this reason you will have to be ever on the alert.

In your intercourse with your patients generally, be kind and forbearing. Cultivate gentleness of manner. There are few occasions on which you may not assume a cheerful, hopeful, and self-reliant bearing.

which will often do more good than the most elegant prescription. Firmness will be demanded with a certain class of patients; but under no circumstances be brusque. Brusqueness in the physician or surgeon is invariably an indication of either ignorance or self-conceit. There was a time when the rudeness of an Abernethy was tolerated in men of remarkable ability; but that time **has passed**. Therefore, if you would succeed as a practitioner in any department of medicine, be kind, considerate, courteous. Courtesy makes the true gentleman. As Lord Chesterfield said: "Prepare yourselves for the world as the athletes used to do for their exercises; oil your mind and your manners to give them the necessary suppleness and flexibility, which strength alone will not do. As the family physician, and likewise also the family friend and councillor, see to it that the confidence reposed in you be not destroyed by prattling gossip. Hold inviolate the secrets confided to your keeping. Even the power of the law cannot wrench them from you. There is an impression that doctors as a class are hard-hearted. Such is not the case. Familiarity with frightful accidents and severe operations, as well as with disease and misery of all sorts, makes the surgeon, or the physician, calm and self-possessed. It is very necessary that such should be the case, but it will be found he is none the less capable of exhibiting a full share of sympathy and pity. Your reward of merit which you take away with you to-day, will prove of little or no value, unless reinforced by such conduct and deportment, professional and personal, as only befits the upright physician. Always, in deciding what you will do for the patient, consider what you would have the patient do for you, or some dear relative, under similar circumstances. In other words, keep ever before you the divine injunction: "Whatsoever ye would that others should do unto you, do ye even so to them."

Aim to be cultivated physicians. Matthew Arnold defines culture as "The knowledge of the best that has been thought and said in the world." A cultivated man is always a broad man; as Goethe said, no side of a man's complex nature can be safely neglected; every **faculty** of the soul, the mind, and the body, should be developed to the greatest possible extent; so that each man may attain the full power and dignity of his nature. Throw physic to the dogs, then, occasionally. Find some congenial pursuit, as among the treasures of English literature; or, if books do not attract, cultivate some hobby, such as the collection of curios or etchings, or paintings, as your purse expands.

Travel when you can. See as much as possible, especially of your own country. Your opinion will be more highly valued when, along with your prescription of change of air or some Spa, you **are in a position** to furnish details from practical observation of the climatic conditions of the country, or the character and surroundings of the mineral spring to which you are sending your patient.

By all means cultivate a hobby. It will especially be found invaluable in declining years. I do not refer, of course, to the kind of hobby which impels a medical man to prescribe the same remedy for everything, whether it be housemaid's knee or prickly heat, or who finds symptoms of some favorite malady in every case. We are all the better for being taken occasionally outside the narrow field of labor which has by accident fallen to us. Those of you who have been fortunate enough to have had a previous university training, will, perhaps, fare best, because no doubt a classical, mathematical and literary drilling of the higher sort better prepares the soil for the acquisition not only of professional knowledge, but trains the mind also for subsequent knowledge. Hence I am among those who look forward to the time when every medical man will be able to write B.A., or B.Sc., as well as M.D., after his name. As Dr. Eliot truly says in one of his admirable essays: "The physician needs thorough education, that he may hold his own in public estimation with other professional men who undergo a prolonged and vigorous preparatory training. Social power and standing come with recognized cultivation; and public confidence is given to men who are believed to seek the truth for truth's sake, holding themselves free from the influence of inherited dogmas, consecrated phrases, and preconceived opinions concerning the desirable results of current enquiries."

Your first duty is, undoubtedly, to your profession; but it is not reasonable to expect that you shall always be mere diagnosticating and healing machines, "grinding out opinions and advice as the grist that comes from the mill." You have a duty to perform as citizens. Thanks to the great advances which have been made of late years in the study of hygiene, the physician in every community has become practically the only effective teacher of the principles and practice of Preventive Medicine. You will be expected to serve on school committees and boards of trustees, where your advice will be sought regarding the construction and ventilation of the school house and physical training of the young—a most important subject and one which you should study carefully. The local boards of health will be anxious to have your opinion on precautions to be taken against the spread of infectious diseases, on methods of disinfection, on the water supply, and on the proper course to be adopted for the cleansing of filthy and overcrowded tenements. A very live question which has recently loomed up is that of tuberculosis. As you are aware, the fight against this dread disease is now on, and you will be almost immediately in the thick of it, either as hospital internes or as general practitioners. The time is fast approaching when tuberculosis will have to be handled as any other plague. According to the reports of the Registrar-General, no fewer

than 41,642 persons died in Great Britain last year from pulmonary tuberculosis alone, other forms being excluded in the estimate. A proper system of notification and registration of this communicable and, therefore, preventable disease, will have to be at once established everywhere. I notice with pleasure that the Government of South Australia has already taken the initiative, having passed an act, in January last, to the effect that, "Every medical practitioner attending on, or consulted by, any person suffering from pulmonary tuberculosis, shall, as soon as the fact becomes known to him, report the same to the local board of the district in which the person resides." Provision is also made for the inspection of cattle and meat, and the proper disinfection of dwellings where the tuberculous bacillus is even suspected to lurk. Milk, about which there is any doubt, can be sold only after having been boiled for ten minutes.

The excellent example set by South Australia will, doubtless, soon be followed by other dependencies of the Crown, and by the mother country itself. I have every reason to believe that an early attempt will be made to bring about similar legislation in Canada.

The scope of preventive medicine has, of late, become so extensive that it will probably soon have to be recognised as a specialty. In Great Britain such is practically the case now. Thanks to the generosity of our large-hearted and open-handed Chancellor, Lord Strathcona and Mount Royal, the Medical Faculty of McGill is now in a position to offer an admirable training in this subject; and, doubtless, a special diploma will be issued from that department some of these days. I fail to see the necessity for the establishment of special schools of hygiene, as advocated by some of our American friends.

Thus, you observe, you will be expected to take a personal interest in the most important questions and movements of the day; and, although I should strongly advise you, as beginners, to eschew politics altogether, I fail to see why, when you shall have reached a certain age, and, perhaps, acquired even a moderate competency, you should still refuse to take a part in the active affairs of your country, especially when among the most burning questions of the day are some which members of our profession alone can intelligently handle. In the last valedictory address, delivered by our lamented colleague and late Dean of this Faculty, Dr. Robert Palmer Howard, I find the following reference to this subject: "You are citizens, as well as physicians. It is very creditable to the medical men of Canada that it cannot be said of them, as it has lately been of their brethren in the mother country, that by not offering themselves for parliament they exhibit great narrowness of mind and want of sympathy with general, social and political questions." In our country many medical men are found devot-

ing their time and abilities to legislation in the Senate and Commons of the Dominion and of its several Provinces. The Lieutenant-Governor of Quebec, the President of the Council of the same Province, the Minister of Railways in the Federal Government, are all physicians. Whether discharging the duties of members of parliament, if such shall be the lot of any of you, or the not less useful functions of physicians, bear constantly in mind that you are members of a profession *primarily* devoted to the *treatment* of disease, but which, in harmony with its genius, charges itself with the duty of informing society how to *prevent* and *guard against* disease." . . . I think it quite possible for a medical man to be a member of the Parliament of Canada and still retain his self respect.

While we are on the subject of politics I trust arrangements may soon be made whereby medical registration in Canada will be much modified and improved. As you are aware, a movement is on foot to establish a Dominion Medical Council, whose license to practice shall be general throughout the Dominion. In view of the possibility of some such scheme becoming law within the next year, I should strongly advise those of you who have no fixed plans to keep up your studies, with a view to passing the examination before that board in the near future. In the event of a failure of the measure, and, in any case, I wish to impress upon you the advisability of taking out your provincial license as you originally intended. This will not involve any additional cost. You can, however, do much towards the success of the scheme by advocating it in the various parts of Canada where your homes are situated, or where you settle in practice. Make it plain that there is no intention on the part of the promoters of the measure to interfere in any way with the rights at present enjoyed by the Provincial Licensing Boards. Those, which so desire, will continue as before, to examine and issue licenses to practice in their own province. The main objects of the movement are to improve medical education in Canada, to obtain reciprocity with Great Britain, to open the whole Dominion, and, indeed, the Empire, to deserving men, and to break down the barriers which at present exist between the various provinces. Any one of these is, I think, deserving of your support. We shall, therefore, look to you to lend us a helping hand.

Gentlemen, I will conclude this rambling address by wishing you all God-speed. Be assured we will rejoice always in your success and be ever proud of any reputation you may achieve.

Fare you well.

JUDICIAL ERRORS IN LUNACY.*

BY

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AND

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The scope of this paper is limited to cases which came under the jurisdiction of criminal courts and refers only to lunatics who have been convicted and sentenced.

The lunatics who thus suffer punishment from the criminal courts may be divided into two classes.

A.

In the first class we meet with those who, though having been submitted to medical examinations and found insane, have, nevertheless, been convicted and sentenced, because the court paid no heed to the opinion of the experts who testified to their irresponsibility. These are judicial errors which may be called intentional.

These errors have been brought up at a meeting of the British Medical Association in 1895, by eminent experts, as to England, as shown by the following extracts from the proceedings:—

Dr. Clouston: "He thought that half of all criminals solemnly tried and condemned to be hanged, were afterwards made out insane and relegated to Broadmoor."

Dr. Nicholson: "The actual percentage of those committed for murder, being reprieved was 5.6 per cent., for a period extending over 30 years."

Dr. Maudsley: "Injustice was undoubtedly done by a parade of justice, condemnation and afterwards removal to Broadmoor."

Dr. Daniel Clarke, of Toronto, gave before this Association, facts collected in Canada, which we would call very interesting if they were not so to be regretted.

Speaking at the last meeting of this Association, Dr. H. E. Allison, of the Matteawan State Hospital for criminal lunatics, said: "It will be noticed that out of one hundred and seventy-nine insane persons who have committed murder, over fifty-three per cent. were received

* Read at the fifty-fifth annual meeting of the American Medico-Psychological Association, held in New York, May, 1899.

from the prisons, having been convicted and sentenced for life. So far as it is possible to judge from their histories, and from the character of their disease, at least forty per cent. of such convicted cases were insane at the time the crime was committed. In many instances the fact of their insanity was not recognised at the time of their trial, but in others the plea was set upon a defence and failed."

B.

The second class comprises all those insane persons whose mental derangement has not been recognised at the trial and have been sentenced, the fact of their insanity having passed unnoticed. No medical opinion was sought for and no plea of insanity was set as a defence.

These are judicial errors which may be called unintentional. To this second class of cases we shall refer exclusively in this paper.

For some years past doctors and criminologists have been struck by the number of unrecognised insane, condemned by the courts, and very interesting statistics on the subject have been published in Europe.

1.

In an essay, published in 1891, Dr. Pactet gives more than 35 observations gathered in the space of a few months, whilst he was house physician at the special infirmary of the Prefecture of Police at Paris.

In 1892, Dr. Paul Garnier, chief physician of the infirmary of the Paris Prefecture of Police, in his report, presented to the Anthropological Congress at Brussels, compiled a statistical table of unrecognised insane, who were condemned and afterwards sent from the various prisons of the Department of the Seine to the special infirmary, in order to undergo an examination as to their sanity.

These lunatics were numbered as follows:—

1886.....	59
1887.....	45
1888.....	49
1889....	37
1890.....	65
	255

This table shows a total of 255 errors for a period of five years.

Dr. Eugene Thibaud, in a remarkable paper published in 1896, gives an account of the number of lunatics judicially condemned and afterwards committed to the Ann's Asylum (Paris), in the service of Dr. Magnan, from 1891 to January 1st, 1896, to be as follows:—

1891.....	22
1892....	17
1893.....	21
1894....	15
1895.....	42

which gives a total of 117 judicial errors for this quinquennial term.

Dr. Henry Lemesle, in an essay published in 1896, gives quite a number of personal observations, collected during the year, of unrecognised lunatics who were condemned and afterwards reached the asylum.

In 1894, at the Congress of Mental Science, held at Clermont Ferrand, Dr. Henry Monod, director of Charities and Public Health of the Department of the Interior, gave the results of an investigation made in France of the lunatics admitted from 1886 to 1890 inclusively, in a certain number of asylums. He proves that of the 30,000 lunatics committed to those establishments, 271 had undergone punishment that medical examination would have prevented.

Almost similar statistics are found in Germany. At the Waldheim prison, of 6,276 prisoners condemned, 2.7 per cent. were lunatics. Dr. Kühn has stated that under like circumstances 144 lunatics were condemned for different crimes.

In Scotland, the Inspector of Prisons, Mr. Frederic Hall, and Professor Leacock found similar results (Lemesle).

We may also refer to the opinion of Dr. Allison reported above for the State of New York.

In the Province of Quebec, we are no better situated, as is shown by the following table compiled from the reports of the Inspectors of Prisons and Asylums.

Year.	No. of prisoners.	Received insane during the year.	Became insane during the year.	Transferred to asylum during the year.	Insane remaining in jail at the end of year.	Insane committed for protection during the year.
1881.....	3,603	176	14	?	25	145
1882.....	3,459	123	12	?	16	26
1883.....	3,250	147	?	?	11	40
1884.....	3,565	133	?	?	5	39
1885.....	3,368	39	5	33	3	16
1886.....	3,415	52	19	24	4	27
1887.....	3,183	94	8	49	3	11
1888.....	3,999	56	14	53	1	30
1889.....	3,960	48	13	52	0	27
1890.....	4,280	39	20	56	1	22
1891.....	4,177	45	18	53	0	8
1892.....	3,478	31	0	38	0	18
1893.....	3,628	37	24	43	0	22
1894.....	4,525	50	13	44	7	14
1895.....	4,652	44	6	45	5	20
1896.....	4,760	34	1	47	4	21
1897.....	4,037	49	0	43	5	12
	65,699	1,197	155	580	90	498

From 1881 to 1897 inclusively, 1,197 lunatics were admitted to the common jails of the Province, of this number only 498 were incarcerated for safe keeping whilst waiting for the proper papers to be made out for their removal to the asylum. Deducting the 498 cases, who were intentionally committed as lunatics, their mental condition

being known, there remains a total number of 699 lunatics condemned, during a period of 17 years, that is to say, an annual average of 40 unrecognised and condemned lunatics.

The proof that these prisoners were lunatics at the time of their trial and sentence is that upon their reception in prison they were immediately classed as lunatics. In the reports, it is stated that they were received as insane, to distinguish them from prisoners who became insane whilst undergoing their sentence. Moreover, the most part of them were transferred to the asylum a very short time after their trial, or, at least, during the year of their conviction, as the tables cited above prove. They show, indeed, that there remained in prison at the end of the year only a very limited number of lunatics and that even in certain years all had been transferred to the asylum. But this number of 699 lunatics received in the prisons after their trial and conviction does not certainly give the exact total of unrecognised and condemned lunatics. For 155 prisoners are reported as having become insane during the time of the detention. There is here certainly an error of interpretation. They are evidently, for the greater part, individuals whose insanity, after having been unrecognised at the time of their trial, was not detected at the time of their committal, and only became known during the time of their detention, on the occasion of some boisterous actions.

To one of us is assigned the duty of examining the prisoners confined in Montreal jail who are thought to be insane. This prison alone receives almost half, and very often more than half of all the individuals condemned in the Province of Quebec. Since 1894 not a single case was met whose insanity did not ante-date the trial and committal.

Moreover, a certain number of condemned lunatics do not appear at all in the above statistics, their mental state having been overlooked not only at the trial, but also during the whole time of their detention. This occurs in cases where the symptoms, though indisputable, are not sufficiently obvious to be apparent to observers without any special knowledge of insanity. When these cases accommodate themselves to prison life and are not difficult to manage, they frequently do not come under notice as lunatics. Also in cases where the prisoner conceals his insane delusions, etc., as Marandon de Montyel has reported numerous cases, and pass consequently unnoticed. These cases are not entered as lunatics in the records.

It is of no special interest to relate the history of these patients, who belong to all classes of insane. They are remarkable only from the fact that they have been unrecognised by the courts and condemned, and have been transferred to an asylum almost immediately after their condemnation, or after having undergone some part of their sentence.

Some of these cases have been noted by one of us in an essay upon the legal responsibility of the insane in Canada.

However, one case appears to me worthy of relating on account of the wording of the judge's sentence. A young woman suffering from mystic delusions had been temporarily removed from an asylum, where she was being treated, by her family, who wished to take charge of her a time. Two weeks after leaving the asylum she escaped from her home and her flight was made known to the police, who were asked to look for her. The following night a constable met the young woman, who was wandering around the streets, and arrested her. At the police station she clearly showed her insanity by saying that "she was the daughter of God." Brought before the magistrate, he sent her to prison, wording his sentence as follows: "Whereas a young woman "of unknown name, but who calls herself the daughter of God, has "been found by this court to be a vagrant, a libertine, and a night-walker, etc."

One of us saw her a few days after she had been condemned, and, on his report, she was sent back to the asylum, from which she had only been allowed to leave on trial.

II.

The other cases that came under our notice have a much more lamentable aspect, for they refer to lunatics who have not only been condemned, after having been unrecognised as such by the courts, but who have been so repeatedly, or who have undergone the hard punishment of the penitentiary for several years, imprisoned among convicts, and subjected to the same regime. Some even of them, after having been found sufficiently sane to be condemned and undergo their punishment, were not judged wise enough to be able to take care of themselves, and were transferred to the asylum on the expiration of their sentence, in place of being given their liberty.

We will lay before you a few examples and make a few remarks on the most striking cases.

In the month of November, 1896, whilst making a visit to one of the penitentiaries we were asked to examine certain convicts. A few days afterwards one of us, sending the results of our examination to the Warden of the penitentiary, wrote as follows:—

Case 1. T. P. shows fixed delusions of persecution, marked by false ideas of persecution, illusions and hallucinations of hearing. This individual is a patient who cannot be suitably treated in a penitentiary. Moreover, the nature of his disease is such that violent reactions follow, which are of such a nature as to be sufficient to compromise the security of the guardians and convicts and disturb order and discipline. On account of his being considered irresponsible, the ordinary measures of restraint usually employed in the peniten-

tiaries cannot be used with him. For all these reasons this unfortunate should be transferred to a lunatic asylum.

Case No. 2. C. L. is almost an imbecile, or, at best, weak-minded in a very marked degree, the inconsistency of his language betrays the want of co-ordination in his ideas, and the weakness of his intelligence. In his case this state is permanent, and it existed at the time he committed his crime, during his trial and when he was sentenced.

In consequence of the weakness of his intellect, this person should not be held accountable for his actions. And as he consequently cannot take care of himself, and as it is dangerous, not only for himself, but also for others, that he should be at large, he should be confined in a lunatic asylum until he can be liberated on condition that a proper watch is kept on him to prevent a repetition of the same acts.

Case No. 3. A. P. The same remarks applied to this patient. He is of weak mind, irresponsible, and incapable of taking care of himself. He should be confined in an asylum. His malady is due to an arrest of his intellectual development.

Case No. 4. T. C. is an imbecile. His intelligence shows much to be wanting. He is irresponsible and not able to take care of himself.

Case No. 5. H. L. shows mental enfeeblement in a marked degree. In his case it is either congenital or terminal. He, moreover, shows delusions (false ideas of persecution) and sensorial troubles (hallucinations of hearing and of general sensibility). These delusions and hallucinations were pre-existent to his crime, and certainly existed at the time of his trial; he then also showed the same intellectual weakness. This patient should be transferred to and kept in an asylum, until all the delusions which now trouble him have disappeared, or given his liberty when sufficient guarantee is given that he will be well watched, so that he will be prevented from repeating his former crimes.

Case No. 6. F. D. is weak-minded, and has delirious ideas and hallucinations of hearing. This weak-mindedness is probably due to an arrest of intellectual development. This is a permanent and definite state, existing previous to his crime and trial. This person should be transferred to a lunatic asylum. He should not be given his liberty unless the assurance was also given that he would be well watched and prevented from doing harm.

As can be seen, all the patients whom I have mentioned, with the exception of T. P., who is suffering from a fixed delirium of persecution, show a marked degree of weakness of the intellect, probably due, for most of them, to an arrest of intellectual de-

velopment. This intellectual weakness is a permanent state, it is the manner of life of the individual; it was anterior to the crimes committed; it existed at the time of their trial, just as it exists at present. That is to say, that they are individuals who have not enough intelligence to understand the nature of their acts, nor the consequences thereof, nor to resist the impulses of their weakened inclinations. These persons were evidently incapable of conducting their defence on account of their mental state.

All these individuals were condemned to several years of detention in the penitentiary, and they had been at the time undergoing their punishment for a certain time. We do not know what became of them all, but the sending of one of them, viz., C. L., the second mentioned above, to St. Jean de Dieu Asylum gives us an opportunity of relating his strange story, which one of us presented to the authorities in the following report.

"I believe it to be my duty to send you a special report on the case of C. L., admitted to the asylum on November 21, 1897, from the Kingston Penitentiary. This patient was admitted to Beauport Asylum on June 20, 1879. After 14 years confinement he escaped from the asylum, August 13, 1893. On the 22nd August, viz., nine days after his escape, he was met near a barn that was on fire, and immediately arrested on suspicion of having set it on fire. The following day, August 23, he was brought before the Police Magistrate at Montreal, and, after the testimony of some witnesses, he was remanded to stand his trial before the Court of Queen's Bench. On September 29 following, he was found guilty of the crime of which he was accused, by a jury in the Court of Queen's Bench, and sentenced to five years imprisonment in the penitentiary. In the month of October, 1896, on the occasion of a casual visit to the penitentiary, I met C. L. I examined him and found that he was an imbecile. I left a report to this effect in the hands of the warden. It was after that visit that C. L. was transferred to the insane department of Kingston penitentiary, but he had already undergone more than three years of his punishment.

It is really astonishing that an imbecile, escaping from a lunatic asylum, where he had been confined for 14 years, who was incapable of reasonable conversation, could, a few days after his escape from the asylum, be brought before the criminal court without exciting any suspicion as to his mental condition. The witnesses, who gave evidence at the trial could not swear to anything, except the fact alone that he had made threats and had been seen near the barn after the discovery of the fire, but they all recalled his incoherent talk and his strange manner of acting, which drew their attention to him. The following account of his previous history was very kindly given me by Dr. Vallee, medical superintendent of the Quebec Asylum."

Dr. Vallee, writing to us, said:—"At the time of C.L.'s commitment to Beauport Asylum, he was classed as a chronic maniac, but he was always very weak-minded, and he was remarkably weak intellectually when he escaped. This is just what astonishes me most, how he could have appeared before a court of justice, without drawing attention to his condition." The medical certificate of commitment, made out in 1879, states that the patient had always shown symptoms of imbecility, but that for the past three years his condition was aggravated by signs of excitement, with threats of violence and murder. In C. L. the skull was remarkably narrow laterally, the face asymmetrical, the ears small and deformed, the countenance without expression. He had, without doubt, the appearance of an imbecile. His conversation was incoherent and restricted to a very limited range of childish ideas; he had but a very imperfect idea of time and place; his memory was very defective, and he had never been able to learn how to read or write.

Case No. 7. D. T....., 35 years of age. Summary. General paralysis; convicted 18 times in the space of four years. Died in prison.

Case No. 8. X..... Summary. An imbecile condemned to three years in the penitentiary. On the expiration of his sentence, transferred to the asylum, because he was not found intelligent enough to take care of himself, seeing that he was a stranger and had no person to look after him. He was certainly in the same condition when he was sentenced, and he should from the first have been sent to the asylum.

Case No. 9. Summary. A. T..... was examined after he had left the penitentiary, where he had served a five years' sentence. He showed a considerable weakness of the intellectual faculties, marked by his incoherent language. After looking into his case it was found that he was insane previous to his conviction, being sentenced when he was evidently insane with delusions. And his faculties became enfeebled (terminal dementia) during his detention.

Case No. 10. Summary. Delusions of wealth and greatness. Condemned to two years in the penitentiary, and one month in prison. Irresponsibility.

J. N. G..... was arrested on March 16, 1896, for refusing to pay his cab fare, and sentenced to one month in prison. Whilst in prison he had such ridiculous ideas of fabulous wealth that the warden asked one of us to examine his mental condition.

J. N. G..... was 78 years of age. After looking into his past record, we found that he had already, the 3rd March, 1892, undergone a term of two years' punishment in the penitentiary for false pretences. He had made a purchase, in payment for which he had given

a cheque on a bank where he had no funds. The explanation he gave of his manner of acting was as follows:—"It is really possible that at the time I had no money in this bank, but they had only to present the cheque at a neighbouring bank. . . . When Vanderbilt gives his cheque it is honoured at all banks, whether he has money there or not." We do not know if this defence is the same as he gave before the court, but of one thing we are certain, he was condemned.

Whilst in the penitentiary he entertained everybody about his fabulous wealth, his gold mines worth millions, about his wonderful inventions, to such a degree that he became a source of disorder. "Had it not been for the short time he was to remain here," the warden wrote us, "it would have been necessary to transfer him to an asylum."

After leaving the penitentiary this same delusion continued until his second arrest. Relying on the testimony of the expert, the authorities had him transferred to an asylum. In April, 1899, he wrote a letter to a friend promising him six million pounds, if he would aid him in escaping.

We have little doubt but that at the time of his first condemnation J. N. G. was a lunatic, and he should have been sent to the asylum instead of being committed to the penitentiary.

Case No. 11. Summary. Epilepsy, ambulatory automatism; 15 times condemned to the common jail. Irresponsibility.

John M. was condemned for being drunk on August 29, 1892, to 15 days in the common jail. This was the first of a series of fifteen commitments for drunkenness, vagrancy or assault, fortunately ending in a convulsive attack a few days after his last commitment to three months in prison, the 4th of November, 1895. This convulsive attack, followed by phenomena out of the ordinary, at length gave a hint, and we were immediately ordered to proceed to a mental examination of the patient.

John M. was 52 years of age, and a cooper by trade. He originally came from Newfoundland, but was a resident of Montreal for the past 26 years. He was a good workman, father of seven children, all well brought up, and until the 29th August, 1892, he had never committed an offence. Though he sometimes used alcoholic liquors, he never abused them; in fact, he was never drunk. He denied any family history of insanity or nervous disease. He showed a slight facial irregularity, the right side being a little more developed than the left.

For five or six years previous the first symptoms of his sickness manifested themselves by loss of consciousness, followed by a crisis of maniacal excitement, afterwards, at intervals of more or less duration, by convulsive crises and loss of consciousness, all or nearly all accompanied or followed by morbid phenomena.

Many times he found himself in the police cell, accused of drunkenness, when he had left home in a state of perfect sobriety. Many times he found himself far from the locality where he had intended to go and in places where he had no reason to be. One morning he woke up in prison: he had been arrested, had undergone his trial, and had been condemned, without being conscious of the fact.

We have, then, in this case, convulsive crisis, loss of memory, ambulatory automatism. And we certainly attribute each of the pretended crimes for which he was sentenced, to a morbid state of mind due to epilepsy.

We must naturally come to the conclusion of irresponsibility in this case, and it is surprising that the court should have refused to accept the sworn testimony that a friend wished to give, viz.: that John M. . . . was an epileptic. John M. has since been transferred to St. Jean de Dieu Asylum.

III.

We see from the above reports and figures that judges, left to their own resources, have been unable to detect insanity in a number of obvious cases, notwithstanding their universally acknowledged perspicacity, carefulness, fairness and learning, to which we wish to render a well-merited tribute.

It is also shown that lunatics have escaped notice in jails and penitentiaries.

From these facts we feel justified to draw the following conclusions:

CONCLUSION.

1. It follows, from what we have just said, that judges are very often unable to appreciate rightly the mental condition of the prisoners brought before them for trial, because they are strangers to the special knowledge of medicine.

2. They should then consider it as one of the duties of their office, to order a medical examination of the mental state of the prisoners, when the circumstances of the crime committed by them, their attitude or their past history point to a defective mental condition.

3. On every occasion, when the defence alleges the irresponsibility of the prisoner, they should order a thorough and independent medical examination, covering all the aspects of the case.

4. They should confide this examination to those who have made a special study of this branch of science.

5. The jail physicians should examine all prisoners immediately after their reception, and report to the magistrate all those who show any doubtful mental condition.

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GRAVES' DISEASE, WITH A REPORT OF THE SUCCESSFUL TREATMENT OF A CASE.*

BY

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In undertaking to read a paper on Graves' disease, I do not presume to offer anything new or to give a satisfactory explanation of the singular combination of symptoms usually found associated together in this troublesome malady; but having had a case under my care for the last eighteen months I propose to refer to some of the main features of the disease and glance at a few of the many theories that have been brought forward to account for them, touching upon some of the various plans of treatment which have been tried to counteract their influence. I hope that in the discussion which may follow, some ideas may be gathered from the experience of others which will be found helpful in the future.

Under the name of Graves' Disease or Exophthalmic Goitre we designate a group of symptoms, the chief of which are increased size of the thyroid gland, an accelerated pulse, and exophthalmos—protrusion of the eye-balls. A number of other disturbances are usually met with, chiefly in the nervous and circulatory systems, but these are usually secondary and not characteristic of the disease.

Exophthalmic goitre has been recognised and more or less accurately described for more than half a century, but up to the present time the researches of the best pathologists have failed to give a rational and satisfactory explanation of its main features. Professor Osler, of Johns Hopkins, speaks of it as "a singular disease arising from an *unknown cause*." As early as 1825, Pavy described some cases of the disease under the designation of "an enlargement of the thyroid gland in connection with enlargement and palpitation of the heart," but among eight cases reported by him, exophthalmos is mentioned in only one. The Germans claim that Basedow was the first to accurately describe the disease, in 1840, while the English usually assign the credit of the discovery to Graves. From that time to the present many widely different theories have been advanced to account for it. Most of the observers, such as Graves and Basedow and their contemporaries as well as many since their time, sought to find the essential cause in a morbid state of the system like that of chlorosis, while others considered the heart the point of origin. Later observers, for the most part, have regarded

* Read before the annual meeting of the Nova Scotia Medical Society, July 5th, 1899.

the disease as being altogether due to neurotic causes. During the last decade, some of the best of modern pathologists have sought to find a solution of the strange trio of symptoms which form the cardinal features of the disease, on the theory that they all arise as a result of a general toxæmia of the system due to the absorption of septic material from the intestinal canal and caused by imperfect digestion and mal-assimilation of food. And when we remember that gastro-intestinal irritation is an almost constant and most troublesome feature in most cases of Graves' disease, as it has been in the case under my own observation, we are inclined to hope that a satisfactory solution of the cause of the disease will eventually be found along this line of investigation.

A theory of the disease, to deserve the name, should be able to derive all the symptoms, or at least the cardinal ones, from a common source; so far this has never been done. An attempt has frequently been made to show that the other symptoms depend upon the struma or goitre, and many arguments have been advanced in support of the theory that the disease is virtually due to an excessive thyroid secretion, and therefore essentially a thyroid secretion toxæmia. Doubtless, the excessive thyroid secretion, when present, influences the other symptoms, but it merely aggravates the symptoms which it did not cause, just as starch and sugar in the diabetic diet aggravate the disease which these articles do not cause. But the goitre is by no means the first symptom in the majority of cases, and hence cannot be regarded as the cause of the others.

The most generally accepted theory in the past of the struma or goitre, has been a hyperæmia of the thyroid gland owing to paralysis of the vaso-motor nerves running in the cervical sympathetic. In support of this view we have the following conditions which are usually present:—strong pulsations of the small branches of the carotid, the rapid growth of the tumour, the perceptible pulsations of the thyroid arteries, and the abnormal development of the thyroid arteries and veins, as shown by the pathological anatomy of the disease; but that these conditions are due to a paralysis of the sympathetic is as yet a matter of question. There is, moreover, as yet no experimental proof that section of the sympathetic can produce struma.

Exophthalmos, the second cardinal symptom, usually makes its appearance soon after the struma; in a few cases it has been seen first. It is almost without exception bilateral. Sometimes it makes its appearance in one eye earlier than the other, and often it is not equally developed on both sides. In some cases it is wholly wanting. In degree, the exophthalmos varies greatly; sometimes there is but slight prominence of the eyeball, at other times the protrusion is so great that no part of the globe is covered by the eyelids, and even disloca-

tion of the globe may occur. The exophthalmos is generally regarded as a mechanical protrusion of the eyeball due to venous hyperæmia and increased development of fat in the cellular tissue of the orbit. The results of ophthalmoscopic examination seem to justify the assumption of venous hyperæmia, and the increased deposit of retrobulbar fat has been directly proved by a series of autopsies, but when we ask why we have venous congestion and increase of orbital fatty tissue, we are at a loss for a satisfactory answer.

The third cardinal symptom of Graves' disease to be noticed, is acceleration of the heart's action. This symptom is usually the first to be developed. For a long time it was supposed to be due to anæmia, but this view has now but few supporters. That it is due, as some have supposed, to a primary disease of the heart is also unsupported by evidence. The bulk of evidence among pathologists of the last twenty years, tends to show that it is caused by disturbance of the function of the cervical sympathetic. It is well known that irritation of the sympathetic will increase the action of the heart, and if we could assume a condition of permanent irritation in any group of nerve fibres, this view would in a large measure explain the increase in the heart's rate. Friedreich has attempted a somewhat different explanation. He thinks that the vaso-motor nerves that originate from the sympathetic are in a state of paralysis, which produces a dilatation of the coronary arteries and causes an increased flow of blood to the muscle of the heart, and so an increased action of that organ. This view, however, does not differ essentially from the former; for the branches of the sympathetic which support the heart are commonly supposed to have the function of transferring the excitement coming from their centre to the ganglia of the heart. Another hypothesis worth mentioning is that of Roben, who considers that the goitre exerts pressure on the sympathetic, causing both exophthalmos and acceleration of the heart. This view is supported by several German pathologists of repute, but it is contradicted by the fact that goitre often appears at the same time as the exophthalmos, or even years after it, and in some cases is altogether wanting. Besides, the ordinary cystic goitre, that often occurs endemically and is often harder and bulkier than that of Graves' disease, produces not exophthalmos, and in cases where compression of the sympathetic is proved to exist, the exophthalmos is wholly wanting. Moreover, exophthalmos does not diminish in proportion to the diminution of the goitre, as would be expected if it were due to the effect of pressure. Thus we see that the demand for a theory of the disease that will satisfactorily account for all the symptoms has not yet been supplied.

The theory of systemic infection by the absorption of poisonous ma-

terial from the intestine, is advocated at the present time by pathologists of high repute, and a plan of treatment, based on this theory, is being adopted by many practitioners, and with highly satisfactory results. The history of the case already referred to as under my own observation supports this idea. It is as follows:—

About eighteen months ago, I was consulted by a lady suffering from what were clearly the symptoms of Graves' disease. She had a good family history, was 29 years of age, married, and the mother of one child, then fifteen months old. The goitre, that led her to seek my advice, was quite prominent, but not more so than the exophthalmos. The pulse rate was 135 per minute and the eyeballs protruded from their orbits with a staring appearance. There were great prostration of strength, loss of appetite, and on the slightest exertion, profuse perspirations. I followed what appeared to be the natural indication as far as the heart's action was concerned, and ordered complete rest with arterial sedatives, commencing with digitalis, and the use of iodine externally. This treatment I was obliged to discontinue in a few days owing to increased nausea and diarrhoea. I then tried in succession most of the arterial sedatives, such as strophanthus, convallaria, spartein, etc., but all caused more or less increase in the gastro-intestinal irritation, while none of them had the slightest effect in controlling the heart's action. I then gave potassium iodide and also acid hydrochlor., but with no benefit whatever. I then put my patient on thyroid extract, partly for the sake of being in the fashion and partly in the hope of deriving some benefit from it, but soon had reason to regret having made the experiment, as it not only was of no benefit whatever, but was of positive injury. At this stage Dr. W. S. Muir, of Truro, kindly saw the case with me and suggested, as a result of his own experience, the use of intestinal antiseptics. His suggestion was at once acted upon and the patient given salicylate of bismuth combined with salol, with an occasional mild mercurial purge to keep the intestinal canal free and as nearly antiseptic as possible. The diet consisted largely of milk and eggs, no meat of any kind, fruit, or vegetables, being given. This treatment, combined with absolute rest in bed and followed up for six weeks produced a decided improvement in all the symptoms of the disease. The intestinal irritation, which had become a most serious feature of the case, was first relieved. Following this, there was soon a reduction of the enlarged thyroid gland. In twelve weeks the pulse rate was reduced from 140 to 100 per minute. The exophthalmos was the last of the three main symptoms to show signs of improvement. In four months she was able to be out of bed and go about the house without any apparent injurious effects. She continued taking small doses of salicylate of bismuth and salol for sev-

eral weeks after she left her bed. The improvement in her general health and strength continued without interruption, and now, for the last six months and more, she has been attending to her usual duties about a farm house with ease and comfort. When I saw her last, a few days ago, her pulse was 82 per minute, strong and regular, her eyes had a perfectly natural appearance, and it required very close examination to distinguish any thyroid enlargement.

I do not say the case is cured, as I am well aware that relapse of her former condition is probable, but the improvement has been so great and the success of this plan of treatment has been so far in excess of all others, that it certainly deserves trial in similar cases, and also strongly suggests the idea that in the disorders of the gastro-intestinal tract may ultimately be found the hitherto unexplained cause of this very serious and often fatal disease.

THE MANAGEMENT OF A SANATORIUM.*

BY

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Though much attention has of late been directed towards the prevention and treatment of tuberculosis,—in both of which sanatoria play so important a part,—to one not having made a study of such institutions, the executive details must be more or less unfamiliar. For this reason some personal observations on the management of a sanatorium may be of interest, and I hope that I may be pardoned if I confine my remarks chiefly to the administration of the Adirondack Cottage Sanitarium, which, from its past record, may be taken as the type of a successful establishment of this nature. To Dr. E. L. Trudeau belongs the credit of having established the first institution in America for the treatment of incipient tuberculosis in persons of moderate means, and in the year 1884 the Adirondack Cottage Sanitarium was founded, Dr. Trudeau by personal appeals having collected enough money to build one small cottage and a wing of the intended main building. From this beginning it has steadily grown, till now it is quite a settlement, consisting of twenty-seven buildings, twenty-two of which are cottages, and affording accommodation for 100 patients.

Before proceeding to describe the sanatorium in detail, it would be perhaps well to say a few words as to the physical conditions of the locality. The sanatorium is situated on the slope of a hill about 1,750 feet above sea-level, and is distant about one and a half miles from the village of Saranac Lake, which is about 100 feet lower. Though in the heart of the Adirondacks, it is easily accessible. The climate is cool and stimulating, having an average mean temperature of 41.5°F. and, owing to its elevation, the thermometer shows a considerable range, this averaging 22.5°F. The winter is cold and dry and there is a moderate snow fall. In summer the days are warm, but with few exceptions not uncomfortably so, and the nights are cool. There is a fair proportion of cloudy and rainy days, but the soil being sandy and porous and the country hilly, the resulting dampness is but transitory, the beneficial effects from the purification of the air much over-balancing the discomfort caused by the rain. For this and other reasons the air is remarkably pure, tests having shown the presence of but few bacteria, moulds being most commonly found.

¹ Being a contribution to a discussion on the "Prevention and Cure of Tuberculosis," at the Montreal Medico-Chirurgical Society, 17th April, 1899.

I will now proceed briefly with a detailed description of the sanatorium. The main or administration building is a large three-storied structure and contains on the ground floor, besides the large entrance hall, the dining room, general sitting room, and office, in which the business affairs of the institution are conducted. The dining room is a large well-lighted room and has a seating capacity for about 120 patients. In this building are also the examining and waiting rooms for patients, the dispensary, and a suite of apartments occupied by the superintendent; and in a wing are servants' quarters, kitchen, etc.; while on the third floor are bedrooms for a limited number of patients. Built into the walls of the waiting rooms and corridors are small receptacles, closed and opened at will, each containing a cuspidor, which, when not called into requisition, is hidden from sight. This plan is adopted where necessary and no large cuspidors are seen anywhere in the establishment. Adjacent to the administration building is the infirmary, a large two-storied cottage, comfortable and well-equipped, where any patient whose condition necessitates it, receives the closest attention, being under constant medical supervision and having the services of a trained nurse by day or night.

The cottages, with one exception, are one-storied buildings and accommodate from two to nine patients, the majority have a capacity of from four to five, the more recent being built for four, this arrangement having proved the most satisfactory. Each cottage has a roomy verandah, well sheltered from the wind by a wood and glass screen, and here the patients pursue the out-door treatment even in the most severe weather. In direct communication with the verandah is a large and well-furnished sitting room and opening off this is a bedroom for each patient. The walls between the sitting rooms and bedrooms being only seven feet in height, leave an open space above by means of which free ventilation to each room is established; the fresh air after being admitted to the cottage by open transoms above the roof of the verandah, is warmed by its passage through the central sitting room, and enters the bedrooms in this condition. Between each bedroom the separating wall reaches to the ceiling, thus assuring privacy to every patient. It is perhaps needless to say that in each cottage the patients are of one sex. The other buildings, namely, the cottage of the resident physician, chapel, library, and recreation pavilion, can be but mentioned as the necessity for brevity prevents any detailed description.

The method of heating in the main building, infirmary, cottage of the resident physician, and the more recent cottages, is by hot water. They are also supplied with bathroom and water closet, and this system is being gradually adopted in the older cottages, which had previously been heated by means of a stove in the central sitting room

and had no water supply. The plumbing and sanitary arrangements are most modern, and the sanatorium is lighted throughout by electricity, the power being furnished from the village of Saranac Lake. The water supply is excellent, and precautions against fire are observed, there being numerous hydrants with good pressure throughout the grounds, and the main building has a special equipment for this emergency.

The governing body is composed of a board of trustees, of which Dr. Trudeau is president. There are four examining physicians, and under the supervision of Dr. Trudeau, the resident physician, and an assistant attend to the medical duties of the institution and see that the treatment is faithfully carried out by the patients. The business affairs of the sanatorium are conducted under the management of the superintendent, Mrs. Miller.

Each patient is examined on entrance, the treatment prescribed and the case classified, a full record being entered in the case book. This examination is repeated at stated intervals and the condition carefully noted. The sputum and urine are thoroughly examined in all instances, and in rare cases, where, after the usual methods of examination, doubt exists as to the diagnosis of tuberculosis, the tuberculin test is made use of, this being a very valuable aid and quite unattended by any harmful effects. As an auxiliary method in the early diagnosis of tuberculosis, steps have been taken to have an X ray outfit provided. Great care in regard to the disposal of the expectoration is insisted on, and when the patients are told that the reason for this is the danger of infecting themselves and others, they are willing to use every precaution in this respect and the education thus acquired is a very important one from a prophylactic point of view both in and outside of the sanatorium. Cuspidors are supplied free of charge. The discipline is not severe, though the rules are enforced, and it would seem that from the liberty allowed the patients, the monotony of treatment is to a certain extent removed and they are more cheerful than would be the case under more rigid discipline. The length of stay in the sanatorium is limited to one year, the average being about nine months.

Treatment. The essential principles of the treatment consist of life in the open air supplemented with a nourishing diet, drugs playing a minor part and being used only as adjuncts where indicated. Each patient is required to remain daily for eight to ten hours in the open air, most of the time at rest, the amount of exercise varying with the condition of the patient. Excessive exercise in any case is not permitted and getting out of breath or actual fatigue must be avoided. It is one of the duties of the resident physician to see that this treatment is faithfully carried out.

Breathing exercises are considered harmful where there are evidences of any activity of the disease process, as it is thought that from a rational standpoint the inflammation in the diseased part of the lungs is increased by the stretching due to the forced inspirations, this inflammation as in any other portion of the body requiring rest that it may subside. Besides this, the danger of tearing down pleuritic adhesions in the process of formation and the starting up of a fresh pleurisy must be considered.

In the cases with moderate fever, walking to the administration building for meals or treatment is allowed, but otherwise they are kept at rest in the open air. Where there is a more marked degree of pyrexia, absolute rest in the recumbent or semi-recumbent position is insisted on, and these cases are cared for in the infirmary, being carried out to the open air on couches when the weather is favorable.

A point one can hardly help noticing as remarkable is the rapid subsidence of the temperature under this treatment, a few days in the open air often bringing a febrile temperature down to normal or nearly so.

It is, of course, of prime importance that the clothing should be suitable, and this receives careful attention. Excessive wrapping up during the cold weather is not encouraged, as while in-doors the patient is apt to become overheated, and when leaving a warm room to sit outside is very apt to become chilled. Wool is worn next the skin both winter and summer, the weight varying with the season. The patients are weighed every two weeks and the weights recorded, the majority showing a gain from time to time.

The diet is varied and abundant and in this sanatorium consists of three full meals, largely composed of proteids and fats, which are served in the large dining hall of the administration building as follows:—Breakfast at 8 a.m., dinner at 1 p.m., and supper at 6 p.m., the heaviest meal being taken in the middle of the day. Meat is supplied at each meal. Great care is observed in the choice and preparation of the food, and the patients with very few exceptions eat very heartily and do not suffer from indigestion. Though this care in regard to the diet is observed, it is not customary for the resident physician to pay a morning visit to each patient, prescribing the individual diet for the day as is the rule in some of the European sanatoria. With the class of patients admitted to this sanatorium such careful selection of food would seem unnecessary; those requiring this strict care are treated in the infirmary, where, under medical supervision, the diet and treatment are adapted to suit the special circumstances. In addition to the three meals previously mentioned, many partake of refreshments between times, this usually consisting of a glass of milk, egg-nog, or a raw egg. The quantity of milk and egg consumed is

large, ninety-five quarts of milk being supplied daily to the sanatorium besides that obtained from seven good milking cows, the property of the institution. It is needless to say that all these cows have been subjected to the tuberculin test with negative results. In this connection it may be of interest to state that of 240 head of cattle from this district not one gave evidence of tuberculosis under the careful application of the tuberculin test in the hands of a skilled veterinarian.

The medicinal treatment, as previously mentioned, is of secondary importance and need be but briefly referred to. It consists of the usual tonics, such as the various preparations of iron, arsenic, cod liver oil, creosote in small doses, strychnine, etc. Alcohol is rarely prescribed and is only used in those cases where there is weakness, loss of appetite, and fever. Among the special conditions requiring treatment are cough, night sweats, hæmorrhage, loss of appetite, constipation, etc. The cough, if not distressing, requires no special treatment, but when such is indicated some sedative such as codeine is used. Night sweats, if severe, are treated with cold sponging, atropine, dilute mineral acids, agaracin, strychnine, etc.; atropine being perhaps the most useful. Hæmorrhage is treated with absolute rest, morphine, or codeine, tincture of digitalis, extract of hydrastis Canadensis, ice, and if severe, ligation of the extremities. For loss of appetite, nut vomica is most commonly made use of, either alone or combined with an alkali, as soda bicarbonate; other bitter tonics and dilute nitro-muriatic acid are also among the agents resorted to. Constipation, which is quite common, is relieved by the use of some laxative such as cascara, aloin, strychnine and belladonna, or the simple remedy of drinking a glassful of hot or cold water at bed time and the first thing in the morning.

The tuberculin treatment with its modifications has been used for some years, the class of case chosen being that which is afebrile, well-nourished, and in whose sputum is found the tubercle bacillus. This treatment is carefully carried out, the quantity very gradually increased, and any distinct reaction is avoided. Under these conditions in no case is harm done, and though it is difficult to say positively that this treatment is beneficial, still, the results would lead one to infer that the tendency to an early relapse is less in those who have been thus treated. Hydrotherapy is limited to cold sponging.

The results of treatment as will be seen by the annual report for 1898 are eminently satisfactory, and the last few years show an improvement over the former ones, due possibly to improved plant and methods, and also to the fact that more early and favorable cases are received, though in this last respect there is still much to be desired. Dr. Trudeau, in a communication to the *Practitioner* for February, 1899, tabulates the results of treatment for the two years 1897 and

1898 for 203 patients who remained an average of nine months (those remaining less than three months are put in a separate class) as follows:—

Condition of patient when admitted.	Apparently cured.	Disease arrested.	Improved.	Unimproved.	Died.
75 incipient cases	65	16	2	2	.....
84 advanced cases	15	38	19	11	1
44 far-advanced cases .....	.....	7	19	13	4
Total. 203	70	71	40	26	6

Thus it will be seen that of 75 incipient cases, 55 were apparently cured, a percentage a trifle over 73; while in 84 advanced cases, only 15 were apparently cured, a percentage of under 18; and of the 44 far advanced cases, there was not one apparently cured. This is a very striking comparison and is made to show the great importance of an early diagnosis and treatment in pulmonary tuberculosis.

As regards the cost of maintenance, I cannot do better than refer to the foot-note in the Treasurer's report for the year 1898, which I will quote verbatim:—

"The total number of hospital days at the sanatorium for the past year was 30,912, or 4,416 weeks. The total receipts from patients, including the \$1,071.57 received from the Trustee of the Free Bed Fund, were \$24,563.91. The running expenses were \$32,425.36, or \$7,761.45 more than the receipts from patients, this excess being paid for out of the contributions to the general fund. The cost per week for each patient was \$6.75 $\frac{3}{4}$, or \$1.75 $\frac{3}{4}$ more than the regular charge per week (\$5.00)."

As will be seen by this statement, there is a loss of \$1.75 $\frac{3}{4}$ on each patient, and this, I may say, is less than in any previous year. (In comparing this cost with that of any other sanatoria, it is only fair to say that the medical director receives no remuneration). The deficiency is made up annually by contributions from friends of the institution.

Having endeavored to describe some of the details of the management of one of the cottage sanatoria, it may be of interest to compare briefly the cottage and barracks systems. Both of these have their advocates, and while in European countries the barracks system (in which they house under one roof, 100 or more patients) is the most popular, in this country the cottage system meets with much more favor. While personally favoring the latter, it must be admitted that each has advantages not possessed by the other. The chief advantage of the barracks system is that it is less expensive to build and maintain. Another, but less important one, is that the patients are under

direct and constant supervision, and consequently can be more easily controlled.

On the other hand, the chief advantages possessed by the cottage system are:—

(1) The patients are less crowded together, and consequently the hygienic conditions are less likely to suffer. This is a very important point.

(2) Where there is an infirmary attached, as there should be in every cottage sanatorium, the separation of the sick from the well can be better carried out.

(3) Patients have the comparative seclusion of their cottages with **daily short walks in the open air to their meals**

In brief, the cottage system has really only one advantage in its application to selected cases, and that is its expense, while its advantages largely over-balance this. Thus, in the treatment of the more early cases or those in whom permanent benefit may be looked for, the cottage system is certainly much to be preferred. But where the rest treatment is strictly carried out and where rigid discipline is enforced, as in many of the European sanatoria, the barracks system would be more suitable. In sanatoria, also, where all stages of the disease are admitted the barracks system would be indicated; but this indiscriminate admission of all stages of the disease to one sanatorium should **not** be practised, and it is now generally conceded that there should be separate institutions for hopeless cases.

In state sanatoria for the consumptive poor, a compromise between the cottage and barracks systems would appear, perhaps, to offer the greatest advantages. This modification consists in having a number of pavilions, preferably of one storey, with a separate room for each patient and capable of accommodating about twenty-five, each being joined to the administration building by a covered passage. This or a somewhat similar plan has been suggested by Knopf in his thesis, "*Les Sanatoria: Traitment et Prophylaxie de la Phthisie Pulmonaire.*" Another plan of sanatorium which offers as its chief attraction economy, consists of an administration building with one-storied pavilions containing a number of rooms, each opening into a verandah running the length of the building. This would be an effective though not a particularly imposing plan, but if substantially constructed would serve as a permanent institution.

In the United States, the necessity for doing something for the consumptive poor has been recognised, and movements are on foot to establish sanatoria in the different states. Massachusetts has taken the lead in this respect and has now a State Sanatorium in working order. It was opened last October with a building capable of accommodating 200 patients. The plan of the building is a modification of

the cottage and barracks system, viz., pavilions connected by covered corridors with the administration building, and radiating from it. This plan permits of its enlargement to a capacity of 500 patients. In the first month it had 85 patients, and sometime later 125, while at the present time it has its full complement of 200 inmates and many are being turned away. The fees charged are \$7.00 per week, of which sum the patient pays half and the state the other half. There is one objection to the plan of this sanatorium and that is that it is laid out in wards.

In the State of New York a scheme for the establishment of a state sanatorium has been formulated. The bill is before the Legislature and has been favourably reported on by a special tuberculosis committee. Pennsylvania and Michigan have been for some time agitating for the establishment of state sanatoria, but nothing definite has as yet been done. The first municipal sanatorium established in America is at Dunning, Illinois, and is supported by the city of Chicago.

In Germany, much is being done for the consumptive poor, and according to Walters, in the *British Medical Journal* of October 15, 1898, the German sickness insurance companies, during 1898, had set aside between 3,000,000 and 4,000,000 marks for the erection or subvention of sanatoria for consumptives, besides sanatoria established by associations of working men, one of which is described by C. Theodore Williams (*British Medical Journal*, April 8, 1899).

There is no reason why Canada should not follow the example set by other countries and establish similar sanatoria for the consumptive poor, especially as the necessity for such institutions is becoming more apparent day by day. It is an indisputable fact that there are many lives sacrificed annually for want of these special institutions where all the conditions necessary for the successful treatment of pulmonary tuberculosis could be obtained at slight cost. Not only would a large number of lives be saved by proper treatment in sanatoria, but the spread of tuberculosis would be checked to a great extent by the isolation of these patients and by the habits of care acquired during their stay in a properly conducted sanatorium. Under existing circumstances the poor man or woman suffering from early tuberculosis has, as a rule, the alternative of remaining at home and there receiving inadequate treatment, often amid the most unhygienic surroundings, the disease, as might be expected, steadily progressing until at last it reaches a hopeless condition. Or, admission to one of the hospitals may be obtained and the patient occupy a ward along with a number of others suffering from various diseases. During all this time the danger of infecting others has been present. This is only one of many instances of daily occurrence, and when we consider what might be done were suitable measures adopted from the first, it is

surely time that such should be available to a greater extent than at present.

A properly conducted sanatorium for the consumptive poor, with accommodation for 100 or over, in a suitable locality, could be run at a cost of \$7.00 per week, half of which might be contributed by the patient or his friends. The amount of public money annually expended on the consumptive poor in the Montreal hospitals alone, would go a long way towards the building and maintenance of such a sanatorium, besides lessening the evils attendant on crowding their wards with consumptives. Of course, it is understood that only those in whom the chances of cure or improvement are good, should be sent to sanatoria. The far advanced, hopeless cases should be cared for in a special institution, but not in the wards of a general hospital, and therefore the need for such institutions is equally great.

Case Reports.

A CASE OF SPORADIC CRETINISM.*

BY

W. G. PUTNAM, B.A., M.D. (Edin.), of Yarmouth, N.S.

This case was discovered by chance during a short holiday in Colchester County, N.S., in August 1897, and was not seen again by me until May, 1899. The measurements, etc., were sent me by the parents from time to time and I believe them to be thoroughly reliable.

Case of Bella F., now six years old.

Family History on the father's side is nearly perfect. Both grandparents are living, aged 83 and 80 years respectively. Of eight uncles and aunts, one aunt died of pneumonia aged 36; the others are alive and well. On the mother's side the record is not so good. Both grandparents died comparatively young, the cause not being definitely ascertained. Most of the uncles and aunts are alive, but none are very robust. Her father and mother both have excellent health. The patient has two brothers and one sister—ages 12, 10, and 4—all of whom are robust children. The surroundings are excellent, the father being a prosperous farmer.

Personal History. At birth nothing unusual was noticed, the child being apparently healthy and well-formed. As the months rolled by, it was noticed that the child never cried, a circumstance which only excited favorable comment. At the end of a year the parents began to feel somewhat worried over the fact that the child had made no attempt to stand or to walk. At the end of another year she was in much the same condition, except that she would stand for a few minutes if given some assistance. Two more years went by, during which she increased slowly in size and gained enough to stand for hours by a chair, but could not be induced to attempt standing alone or walking, nor would she try to talk.

She was taken to several medical men during her fourth year, all of whom gave a rather hopeless prognosis, suggesting emulsion of cod liver oil, syrup ferri iodidi, etc., as being of possible service.

When I saw her first she was four years and two months old, 29 inches in height, weighed 23 pounds, with measurements of waist, 22 inches, and navel, 21 inches. She had the typical "wooden" expression of a cretin, coarse dry hair, a small umbilical hernia, and a very dry,

* Read at the Annual Meeting of the Nova Scotia Medical Society, July 6th, 1899.



AGE, 4 YEARS 2 MONTHS.

scaly skin. The last was so pronounced that her mother said that on shaking her clothes after taking them off it seemed as if they were filled with bran. She seemed to take but little notice of what was going on around her and would stand for hours by a chair turning over books or other simple toys. The bowels were obstinately constipated. There was no evidence of rickets.

Her general appearance was that of some cases of sporadic cretinism pictured in the *British Medical Journal* of about four years ago, and the result of those cases as treated with thyroid extract induced me to suggest a trial of it with her. She began taking it on September 18th, 1897, taking at first the equivalent of one-sixth of a sheep's thyroid daily, increased later to twice that quantity. At no time was any systemic disturbance induced thereby, and the improvement was immediate and continuous.

My first report from her was on October 20th, 1897, at which time there was practically no change from the measurements of a month before, but she was said to be looking brighter and cried at times. On December 9th, of the same year, less than three months from the time she commenced treatment, there was a marked improvement: height, 34 inches; weight, $24\frac{3}{4}$ pounds; navel, 19 inches. She was walking alone. The hernia had quite disappeared and her bowels were regular.

From this time on her progress has been steady in every direction. She has had no other treatment than the thyroid extract in the above-mentioned doses. She was without it once for a month and during that time her parents thought she lost ground to some extent.

I saw her again on May 23rd of this year and did not recognize her as the child of two years before. She was then 38 inches in height and weighed 37 pounds. She could talk as plainly as her brother, who was two years younger, and was running about enjoying herself as any healthy child should. She took an intelligent interest in things about the house and farm and looked after her own interests in every way.

I have not been able to get a photograph of recent date to show in conjunction with this one taken before treatment was begun. In closing, I may say that the result of treatment has fully confirmed the diagnosis of sporadic cretinism.

A CASE OF SPORADIC CRETINISM.*

BY

G. GORDON CAMPBELL, B.Sc., M.D.,

Lecturer in Clinical Medicine, McGill University ; Assistant Physician to the Montreal General Hospital.

As cases of this condition are always of interest and especially on account of the wonderful results following thyroid treatment, I have thought that a report of the following instance, which had a fairly characteristic group of symptoms and has improved rapidly under the specific treatment, would be worth publishing.

The patient was first seen by me in May, 1898, and gave the following history:—

A. M., female, aged five years, was born on June 8th, 1893. The labour was prolonged and required the assistance of forceps to accomplish delivery, but was otherwise normal. Nothing special was noticed about the child at birth. The parents were living at the time in Chicago, but removed to Dayton, Ohio, six months later. Here she was taken to see a physician on account of the thickness of her tongue, and under the impression that the large tongue might be due to "tongue-tie" the frenum was cut. When the child was three years old the family moved again to Buffalo, New York, and as she did not appear to be developing properly and did not try to talk, another physician was consulted, who stated that he did not understand the condition, but suggested sending her to a hospital for the eye, ear, and throat, as there might be something gained by an examination of the throat. This was accordingly done, and at this hospital the parents were informed that post-nasal adenoids were the cause of her want of development and their removal recommended. The parents, however, would not consent to an operation, although the diagnosis was confirmed by a second physician. The family then moved to Montréal.

Early in May, 1898, I was asked by Dr. F. J. Shepherd to see a case to which he had been called but was unable to go, and on speaking to him about it the next day, he told me that he, while passing in his carriage, had seen a cretin being wheeled up and down in front of the house in a baby carriage. I promised if I got the opportunity to make enquiries about it, and some weeks later had occasion to see the father. On asking him about the child he gave the history already related, but was not very anxious to have me see the case, having come to the

* Read before the Annual Meeting of the Nova Scotia Medical Society, July 6th, 1899.

conclusion that nothing could be done for his child. However, on showing him some illustrations of sporadic cretinism with the marked improvement produced by treatment by thyroids, I gained his consent to my seeing his child.

As will be seen from the accompanying plate of a photograph taken shortly after this and before treatment was begun, examination showed a girl of considerably under the average height for her age, with a short, thick body, large head, and limbs rather large in proportion to the trunk. The face was round and fat, the eye-lids thick and palpebral aperture narrow, the nose wide and flattened, and the lips thick and prominent with the large tongue most of the time protruding between them. Her head was fairly well covered with rather fine hair, which was, however, dry, lustreless and difficult to keep in place. The abdomen was large and prominent and there was a small umbilical hernia. The skin, though dry, could not properly be classed as xeroderma. The child's expression was the characteristic, dull, stolid, stare of cretinism. She showed little, if any, signs of mental development, being unable to express her wants or to speak, except for two sounds which the parents interpreted as "ma" and "pa." She seemed, however, to understand in a measure what was said to her. She would sit all day without crying or laughing or attempting to enter into the play of her brothers and sisters, but at other times was extremely nervous and irritable and easily frightened by strangers. She was still wearing a napkin and required constant care and attention.

In the *family history* there is nothing of interest. The patient is the fifth of a family of seven, both older and younger children being of average development. When first seen, a younger sister, although there is almost three years difference in their ages, was taller and brighter than the patient.

Treatment was commenced on May 17th, 1898, two grains of Armour's desiccated thyroids being given three times a day to begin with. This, however, proved to be more than she could bear, as she developed the condition described as acute thyroidism, and the dose was diminished to two grains twice a day and finally to two grains once a day, which she has continued to take ever since. Improvement at first was slow, the earliest indication that the thyroid was having any effect upon her condition being in the rapid loss of flesh and falling out of the hair. Her health also appeared to fail. It was soon seen, however, that the expression of her face was changing and the improvement in both mental and bodily condition has been going on continuously ever since.

Her present condition, as compared with that of a year ago, is well shown in the second plate of a photograph taken in June, 1899, thirteen months after the first one. Her height, which was 34 inches, has

increased to 38, her expression has entirely changed until now she is an intelligent child, looking perhaps four or five rather than six years of age. The improvement in respect to her mental condition is in no way better shown than by comparison with the younger sister, who is now some two inches shorter, and although one year ago vastly her superior in mental development, is now barely her equal, if not her inferior. The cretin is now a bright vivacious child, taking an interest in and talking about everything around her, does not require more than ordinary attention, has given up wearing napkins and attends to her own wants in that respect, and assists in the care of her two younger sisters. She has also lost the most of her timidity. Physically, besides the gain in height, the thickness of the lips, nose, eye-lids and tongue have entirely disappeared, and, although she does not yet look quite right, one would never suppose that she was a cretin. The prominence of the abdomen and the umbilical hernia have also disappeared and the disproportion between the limbs and body is not noticeable. She has lost almost all of her subcutaneous fat, and the new growth of hair is fine, silky, and easily kept in place.

The interesting points about this case are the vast improvement produced by a year's treatment, the small dose of thyroid required, and the fact that the condition was so long unrecognized. With regard to the degree of benefit received from this form of treatment, reports of cases tend to show that it is greater the earlier in life it is instituted after the condition has developed and also the younger the age of the child. Although there have been a few brilliant results from the treatment of cretins who have reached adult life, in the majority of cases it is far from being as satisfactory as in the case reported. The history of the case previous to coming to Montreal shows that, although these cases cannot be mistaken by any one who has ever had the advantage of seeing a well-marked type, there is nothing in any one of the symptoms or appearances taken separately that would give a clue to the diagnosis, at least in early childhood. Backward children are by no means uncommon, and the condition which is the cause of their want of development may not be recognized until they reach the age of three or even five years. In cretinism the characteristics of course become more marked as the child grows older and fails to develop. In three cases of this condition which I have had under my care, the youngest was three years of age, and, although on taking the appearances and symptoms as a whole, the condition was very suggestive and was looked upon as sporadic cretinism, the diagnosis was not absolute until thyroid treatment had proved its correctness.

TWO CASES OF "LA GRIPPE" WITH SYMPTOMS POINTING TO CEREBRO-SPINAL MENINGITIS.*

BY

M. S. DICKSON, M.D., of Great Village, Nova Scotia.

On March 21st of the present year I was called to see E. B., aged 19 years, and J. B., aged 21 years, brothers, said to be suffering from a relapse of "la grippe." Both boys having arrived home in a delirious condition I could not get a very good history of their present illness up to that time. Their father told me that two weeks before they had had an ordinary attack of "la grippe," which had confined them to their beds for several days, the other members of the family having similar attacks at that time. They had no medical attendance, but I have no doubt but that the old gentleman's diagnosis was correct. The boys recovered sufficiently to enable them to return to their work, which was chopping in the lumber woods. After working a few days they had to give up, and returned to the railway station nearest their home on the 20th of March and started to walk the remaining distance of four miles in a blinding snowstorm. They were, by the time they arrived at the station, in a semi-delirious condition, and the younger, E. B., gave out on the road. The elder reached home in an exhausted condition, and after being questioned about his brother, it was learned that he had given out by the road-side, and when brought home was wildly delirious. The following evening I was called in.

I will first give a description of the condition and symptoms of the younger, and refer first to those of the nervous system which were the most striking. There was headache of the most severe type, at first most marked in the frontal region, but later becoming equally severe in the occipital. Though delirium was so active at times that the pain in the head would be apparently forgotten in his raving, it would be as severe as ever on his partial return to consciousness, causing the patient to cry out as though with most excruciating pain. Though light, motion, or noise increased the severity of the pain, it was usually most severe in the early part of the night. Although apparently dreading any motion, he would at times become very restless and even try in his delirium to get out of bed. The head was thrown back, but not held very rigid at the time of my first visit on the 21st. At the time of my second and third visits on the 26th and 27th the rigidity was very marked. Lumbar pain was very severe when I first arrived

* Read before the Annual Meeting of the Nova Scotia Medical Society, July 5th, 1899.

in the evening, but had not been complained of earlier in the day. Lumbar pain continued throughout and was exaggerated by motion, but not by pressure along the spinal column. The hand slipped under the pillow would cause intense pain on making the slightest efforts to raise or move the head. There was no paralysis up to the time of my last visit to him on the 27th. Delirium was constant and at times violent, but for the most part low and muttering, with hallucinations of sight and hearing. Occasionally, when spoken to sharply several times in succession, he would answer questions quite rationally and distinctly. The eye symptoms were not important, the pupils were normal and reacted well and equally to light. Hearing was very dull. Insomnia was very persistent.

The temperature on the first visit was 106°F. , on the 26th 104.2°F. , and on the 27th, 103.5°F. The pulse on the first visit was 120, on the 26th, 108, and on the 27th, 102, and irregular. It was small and wiry from the first.

Respiration was not much accelerated, but on the 26th and 27th it was of the Cheyne-Stokes type. Percussion and auscultation were negative.

Herpes developed early and was most marked on the lips and buccal surfaces with some spots on the chin and on one cheek. At my first visit there were bright red spots of various sizes on the face and body which did not disappear on pressure. They became much darker and less marked by the 26th.

Vomiting was a troublesome symptom for the first two days. The tongue had a thick yellow coating and was very dry at first, and in a few days became glazed, dark and fissured. The appetite was very poor. Constipation was marked at first, but a mild laxative produced quite a copious diarrhoea. There was never the slightest tenderness over the abdomen nor any tympanites.

The urine was about normal in quantity and contained traces of albumin.

Death took place on the 27th, nine days after coming home, the patient being comatose for about eighteen hours. Decomposition was very rapid; twelve hours after death it was very difficult to approach the corpse, which was quite black and offensive, and the skin would slip from the flesh on slight pressure.

The history of the older boy is very similar, but the temperature ran a much lower course, falling irregularly from 102.5°F. on the 21st to 99°F. on the 27th, and rising again to 100°F. on the 30th, which was the last time I saw him. The pulse on the 27th ran from 78 to 96, varying that much in a few minutes. It was small and wiry. Marked variation was noted right through his case, counting ten to twenty beats more at one time than it would ten minutes later. On March 30th, the day before death, it was intermittent.

The delirium in this case was of the low, muttering type right through.

The bright red rash was less marked than in his brother's case, but there were large blotches of a dark red colour developed on his back a day before his death.

Twenty-four hours before death the odour of decomposition was very strong, and by drawing the finger with firm pressure over the body the epidermis would tear and roll up like a piece of wet wrapping paper, while the slightest touch would leave a dark red mark. Death occurred on April 1st, eleven days after coming home.

In neither of these cases was there paralysis or very marked contractions. Though Kernig's sign was more marked in the elder brother's case, it was quite well marked in the other. In the former the legs could not be straightened much beyond a right angle when the patient was sitting up in bed. If, as is claimed, this sign indicates meningitis, we may ask: Had these boys la grippe, or did they only have meningitis or cerebro-spinal meningitis? From what I could learn of the sickness they had early in March, I think they then suffered from that most protean of all diseases, la grippe, and that their subsequent exposure to the hardships and insanitary conditions of lumber-camp life along with their tramp home in a snowstorm in their weak condition brought on cerebro-spinal meningitis as a complication.

SURGICAL KIDNEY FOLLOWING CYSTITIS.

BY

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Gynæcologist to the Protestant General Hospital, Ottawa.

Agnes T., aged 27 years, married, par. iii., a pale, emaciated, very septic-looking woman, was admitted to hospital on April 10, 1899. Her present trouble dates from a confinement two months ago, following which, she gives a history of chills, fever, and sweats for two weeks. One week after her confinement she began to have frequent and painful micturition and noticed a creamy deposit in the urine the following week. Pus in varying quantities continued in the urine up to the date of her admission to hospital. A week following the attack of cystitis patient began to have pain in the left lumbar region, sometimes quite severe and at times running down the left thigh. The urine showed a gradually increasing amount of pus, but the symptoms of cystitis abated a good deal.

Her regular medical attendant having pronounced her all right, telling her the symptoms would "wear away," and having refused to give her any further treatment, Dr. Scott was called in, and on making a diagnosis of surgical kidney, kindly referred the case to me for operation.

On examination, a great deal of fulness and tenderness is readily made out in the left lumbar region. Dulness extends from the crest of the ilium to the 11th rib, and from the spine to within about three inches of the umbilicus. A large mass well made out in this region presents no fluctuation, but great tenderness on pressure. The temperature is running a typically septic course, ranging from $103\frac{1}{2}^{\circ}\text{F.}$, to 98°F. The patient complains of chills, sweats, pain in the side, soreness on moving, and loss of appetite. The tongue is dark brown, heavily coated, and the breath fetid. Her general appearance shows a very septic condition; pulse 130.

A cystoscopic examination, after washing out the bladder, shows pus of a thick yellowish character oozing from the left ureter. Catheterisation of the right ureter gives a normal sample of urine. The bladder mucous membrane is congested considerably. A sample of the pus from the left ureter collected through the cystoscope pushed up against the bladder wall, as the pus issuing from the ureter would not flow through the ureteral catheter, which passed readily into the ureter however. Microscopic examination by Dr. Mayberry shows an enormous amount of pus cells, but no tubercle bacilli. The amount of urine in twenty-four hours amounts to only 17 ounces.

The Family and Past History are negative.

Operation. On April 13th, the patient was anaesthetised and a lumbar incision made below the border of the twelfth rib and the kidney exposed. The capsule was found adherent and the kidney enormously enlarged, extending from the diaphragm to above the level of the crest of the ilium below. The kidney substance was so thin and friable that it ruptured almost immediately and about a quart of thick pus poured out. The patient being very weak, the kidney was rapidly enucleated, the ureter, vein, and artery secured by a clamp, and the cavity washed out and packed with iodoform gauze.

Some shock followed, but the patient rallied nicely. The wound was dressed on the second day and the clamp removed; it closed rapidly and the temperature reached normal at the end of ten days. The urine increased daily and reached a normal quantity on May 8th, on which date the patient was sitting up and feeling well, with a normal temperature and a good appetite, and was rapidly gaining flesh. She was discharged on May 15th with the wound healed completely.

This case was evidently one of primary infection from the bladder extending up the ureter. The fact that the large amount of pus escaped from the ureter, and the fact that the urethral catheter passed readily into the ureter, excludes the idea of any stricture of the ureter which the enormous pus collection might suggest.

CYST OF THE EPIGLOTTIS.*

BY

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A youth, aged 16 years, applied in October, 1898, for relief from the following symptoms:—Difficulty in swallowing, nasal voice, snoring, and cough. The symptoms were not at all distressing (except the snoring), but the peculiar “right turn” he had to give his head in swallowing formed the chief reason for consulting a physician.

The boy’s facial expression was typical of mouth-breathing of long standing, but he was otherwise in good general health. He presented a letter from his physician in Glasgow, the substance of which was that the boy had suffered from great lymphoid hypertrophy “over the whole of the upper respiratory tract.” He had had no adenoids, but the base of the tongue had been very troublesome. A large cyst had been removed from the right vallecula. The boy had been under treatment for thirteen months previous to sailing for Canada.

Upon examination of the mouth, pressure on the tongue caused a bladder-like mass to spring into view, as large as a small hen’s egg. With the laryngoscope this tumour could be seen occupying (I), the whole of the upper (or lingual) surface on the right side of the epiglottis; (II), the right vallecula and slightly extending to the under surface of the epiglottis. It completely obscured the entrance to the larynx. The tonsils were not large and the post nasal space was clear. The treatment consisted of evacuating the pale green-coloured gelatinous contents, curetting the interior of the cyst and injecting six drops of a five per cent. solution of carbolic acid in glycerine and water.

One week later the boy, although much relieved of his loud snoring, still swallowed clumsily, as the cyst had slightly refilled. It was again emptied and injected with ten drops of a five per cent. solution. The third week, there was found still less fluid, and fifteen drops of a ten per cent. solution were injected. During the week following, the boy contracted an acute tonsillitis; the cyst caused a very bad taste and breath, and as soon as he could call again the cyst-lining was lifted out in one sloughing mass.

The patient has been seen every two months from that time (November, 1898), the last inspection being made during the week just passed, and the site of the cyst, on the epiglottis, is quite flat, although the lymphoid tissue (i.e., the lingual tonsil) in the neighbour-

* Read before the Montreal Medico-Chirurgical Society, May 29th, 1898.

hood is very abundant. This the boy objects to have removed, as he feels perfectly well in every way.

For three years previously this lad had been sent to different health resorts in Great Britain for what was termed "a laryngeal affection." Cough and thickness of speech were the symptoms and these were not absent for any length of time, until the cyst-lining had been removed.

Glandular elements are contained in the soft tissues of the vocal bands and epiglottis, and hence it is readily understood how cysts occur most frequently upon these parts when the secretory duct of a mucous follicle becomes blocked. Nevertheless, cystic tumours of the epiglottis are amongst the rarest benign tumours found in this organ. The first on record was reported by Durham in 1863, a cyst of the epiglottis.

Different methods of treatment have been advised according to the characters and size of the tumours, but when a snare loop cannot take hold of the swelling the treatment by injection seems very satisfactory.

RETROSPECT

OF

CURRENT LITERATURE.

Medicine.

UNDER THE CHARGE OF JAMES STEWART.

Serumtherapy in Pleurisy with Effusion.

A. BRETON, "Sérothérapie dans la pleurésie sereuse."—*Gazette des Hôpitaux*, 1899. Nos. 25 and 27.

The writer bases his article on three cases of pleurisy with effusion in which he obtained a favourable result by injecting subcutaneously into the patients small quantities of their own effusion. Taking for granted the truth of Landouzy's assertion that "every pleurisy which cannot be proved to be due to trauma, rheumatism, or some other ascertainable cause, is to be suspected of a tuberculous nature," he concluded that the pleural effusion, known to contain tuberculin as a product of bacillary growth, might prove useful as a vaccine in such cases. Gilbert (cf Geneva), in 1893, and Scarpa, in 1896, had already anticipated this method of treatment. The former treated twelve cases of pleurisy by hypodermic injection of the pleural liquid. In two cases there was no reaction or any effect on the effusion. In the others there was a rise of temperature to 38.5°C.-40°C., and from the date of the injection there was a rapid absorption of the effusion (six to ten days), accompanied by an alleviation of the symptoms and an amelioration of the general condition of the patients. All of the patients were well in a fortnight or three weeks.

Scarpa, in nine similar cases, was successful in six and failed in three, but claims that in the latter the pleuritic serum had a favourable effect on the tuberculous lesions in the lungs. While admitting that he was not in a position to prove the tuberculous nature of his cases by inoculations of guinea pigs with the effusion, Breton adduces the evidence of others who have done work in this direction. (Ricochon, Netter, Prince Ferdinand-Louis of Bavaria, Lemoine, Aschoff, and Le Damany) and the statistics published in Germany, where 87 per cent. of cases of pleurisy reacted to injections of tuberculin. His personal

observations rest on three cases of which the following is a summary:—

The method employed was to remove a small quantity of the effusion with an exploratory needle and then, withdrawing the point of the needle as far as the subcutaneous tissue, to inject the fluid under the skin. The quantity used was from 2 to 5 cc., and the injections were repeated at intervals varying from three to four days to a week.

The first case was that of a man 57 years of age, who, two months previously, had an effusion in the left pleura, and was readmitted to the hospital with the same complaint. There were no pulmonary lesions or cardiac complications and there was no fever. In all, six injections of the pleural effusion were made, in a period of a little over a month. A slight rise of temperature was noted only twice during the course of the illness, the first, on the day following the first injection ($38^{\circ}\text{C}.$), the second, four days after the fourth injection. Thirty-six days elapsed between the first injection and the absorption of the effusion.

In the second case, a young woman, twenty-two years of age, with an effusion on the right side, had suffered from anæmia for some time, and on two occasions from bronchitis. The pleural effusion, on her admission, reached as high as the spine of the scapula, and there was much dyspnoea. The pulse was 90, the temperature $38.1^{\circ}\text{C}.$ The first injection of 5 cc. of pleural effusion was followed by malaise and vomiting, which lasted until the following day. A second injection was given four days later. Two days after the first injection the effusion began to subside and the general condition to improve, and this improvement continued after the second injection so rapidly that by the end of a week from the date of the first injection no fluid could be obtained by aspiration at different levels, and the breath sounds were well heard from apex to base, in which latter situation there was a friction rub. A little dulness remained at the base of the lung. A skiagraph picture taken eleven days later showed only a slight shading at the base of the right lung, due to the thickening of the pleura.

In the last case, that of a girl 16 years of age, a left-sided pleurisy began five days before entrance into the hospital. Breathing was audible only above the spine of the scapula, and the heart was much displaced downwards and to the right. Temperature, 37.8° – $38.6^{\circ}\text{C}.$; pulse, 104; respirations, 24. Four days later exploratory aspiration and injection of 2 cc. of the effusion was performed. There was no febrile reaction beyond $38.2^{\circ}\text{C}.$ From this date the temperature did not at any time rise beyond $37.6^{\circ}\text{C}.$ A second injection of 5 cc. was made two days later, and a third three days after the second. Five days after the first injection the apex beat was palpable, one centimetre within the left nipple, and there were dulness and bronchial breathing only

over the lower third of the left lung. Three days later a skiagraph picture showed the heart in its normal situation and an opaque area in the lower third of the left side of the thorax. A fourth injection of 5 cc. was given on September 22nd, five days after the third, and on October 1st no effusion could be obtained on exploratory puncture. The patient was discharged October 14th, at which time it was impossible to find clinically any trace of a former effusion or any lesion of the lung. The effusion was completely absorbed eighteen days after the first injection of serum.

The writer thinks that he is justified in claiming that the injections shorten the duration of the effusion which is usually considered *in statu quo* until about the third week, according to Talmon and Lancereaux even longer. There appears to be, moreover, a favorable effect on the heart and on the respiration. The conclusions drawn are:—

(1) That the pleural effusion may be considered to be an attenuated tuberculin.

(2) That this liquid may be injected subcutaneously without doing any harm.

[It would be well in order to avoid a possible auto-infection from the presence of tubercle bacilli in the effusion, to centrifugate the exudate in sterilized tubes before injecting it subcutaneously].

Phloridzin in the Diagnosis of Renal Disease.

CH. ACHARD. "L'Exploration clinique des Fonctions Rénales et la Glycosurie Phlorhidzique."—*Gazette des Hôpitaux*, 1899, 22.

The usual methods of clinical examination of the urine furnish the means of determining qualitatively and quantitatively the *spontaneous* elimination by the kidneys of substances which are normally present in the urine, or of those that are abnormal. Further information may, however, be obtained by inducing, by special tests, the passage through the kidneys of some special substance. The principle of this method may be summarized as follows:—To introduce beneath the skin a substance that is easily eliminated by the urine but is not found in the normal urine, and to observe methodically the general and the special features of its elimination. Methylene blue has seemed specially appropriate for this purpose, but as the principle is a general one it is evident that other substances may be used. Apart from such substances as are never normally present in the body tissues or fluids (i.e., purely foreign bodies), and those that are normal constituents of the urine, there is an intermediate category of substances (represented by glucose) existing in the blood but not passing into the urine normally. In a series of researches both in diabetes and in artificial glycosuria, it was found that a diseased state of the kidneys impaired the elimina-

tion of glucose. Hence, as it is easy to produce artificial glycosuria in various ways, it will readily be seen that this method affords a means of studying the renal functions. It is obvious that the glycosuria must be induced without introducing sugar itself into the organism. This may be done by phloridzin, which is harmless and possesses, moreover, the peculiar advantage of inducing glycosuria by a direct action on the kidneys. Klemperer found that the injection of phloridzin did not produce glycosuria in a certain number of individuals who had undoubted renal disease. Basing himself on these observations, Achard has devised a method for the clinical use of phloridzin.

Five milligrams are injected subcutaneously, and the urine is collected and examined methodically for sugar from the time of the injection. It is, of course, necessary to prove by a preliminary examination that the urine does not contain sugar before the test is applied. When the kidneys are healthy sugar is eliminated for about three hours, the quantity varying from five centigrams to two and a half grams. In a majority of cases in which the symptoms suggest impaired renal function, there is no sugar, or only a trace in the urine. The value of the test has, moreover, been proved by a number of autopsies. This test may be combined with the test by methylene blue, one controlling the other.

Kernig's Signs in Meningitis.

J. B. HERRICK. "Concerning Kernig's Sign in Meningitis,"—*American Journal of the Medical Sciences*, July, 1899.

The revival of interest in this important sign of meningitis is timely. Kernig, in 1884, pointed out that in those suffering from meningitis, extension of the leg when the patient was sitting was painful and difficult owing to a marked flexor contraction of the thigh muscles, whereas when the patient was lying down the leg could easily be extended. He found this sign present in every one of fifteen cases examined, and failed to find it where there was no meningeal affection. In six cases, though there was not acute meningitis, the sign was more or less marked; in these cases there was some abnormality of the pia mater—œdema, intermeningeal hæmorrhage, etc. He considered that it was present as early and remained as late as rigidity of the neck.

Herrick reviews the literature and notes that most of the text-books do not mention the sign. Netter, in 1898, brought it into notice once more and recorded the presence of Kernig's sign in 90 per cent. of his cases. Herrick found the sign in seventeen out of nineteen cases, or 89.4 per cent. In the two negative cases, there was only one examination shortly before death, and at the time there was general muscular relaxation. In the series, there were nine cases of epidemic cerebro-

spinal meningitis, seven of tuberculous meningitis, two of pneumococcal meningitis, and one of syphilitic meningitis. In one hundred cases of disease other than meningitis, the test was absent in ninety-eight, and present in two. One of these latter was a case of subdural hæmorrhage, the other a gonorrhœal arthritic in which the unaffected leg had remained for a long time in the flexed position. Netter recorded a case of typhoid fever in which the test was present. The patient died, and the autopsy showed typhoid ulceration of the bowels and a cerebro-spinal meningitis due to a mixed infection of *B. typhosus* and *staphylococcus pyogenes*. Herrick concludes that the test is present in 80 to 90 per cent. of cases of meningitis and only occasionally present in other affections.

The technique of eliciting the sign is simple. "The patient may be made to sit up on the edge of the bed with the legs hanging down, thus bringing the thigh at right angles to the body, when extension of the leg can be attempted; or the thigh can be brought at right angles to the body as the patient lies in bed on the side, or preferably on the back, and the leg then extended." In delirious patients and in spastic conditions there may be some resistance at first, which is easily overcome, but not so in meningitis where the flexion remains and the patient's back may be lifted from the bed in the attempt to extend the leg on the thigh. The attempt at forcible extension produced evident pain, even in those patients who appear to be profoundly unconscious. Local causes must be excluded before concluding that the sign is present, e.g., arthritis of the hip or knee, myositis, old contractures, and, particularly, sciatica. There is no satisfactory explanation of the phenomenon. It is not due to increased intracranial pressure, for the sign is not present in hydrocephalus, in cerebral tumours, or in cerebral hæmorrhage. There is normally some difficulty in fully extending the leg when the thigh is flexed at an acute angle on the body, owing to the shortness of the flexors of the leg and the abundance of tendinous fibres in them, and it may be, that in meningitis the normal tonus is so exaggerated that a flexor contracture results when the thigh is brought up towards the abdomen.

H. A. Lafleur.

Surgery.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

Suprapubic and Perineal Cystotomy.

DANDRIDGE, "A Comparison of the merits of Suprapubic and Perineal Cystotomy."—*Annals of Surgery*, July, 1899.

Dr. Dandridge, of Cincinnati, has produced a very thoughtful paper on this subject. After reviewing the history of the two operations and showing that the suprapubic method is not a new one, the writer goes on to discuss the merits and demerits of the two operations. He shows that the technique of suprapubic cystotomy has considerably changed since the days of Petersen's bags, and that now the Trendelenburg position with the bladder distended with some antiseptic solution, or by air, gives full access to the viscus without much danger of wounding the peritoneum. He next goes on to consider the conditions which render any form of cystotomy necessary.

(1) *Drainage for cystitis.* This may be only temporary, due to removable causes of obstruction, or it may require to be permanent because the obstruction is non-removable. The writer expresses a strong preference for the perineal as opposed to the suprapubic drain. He argues that the suprapubic opening causes adhesions between the apex of the bladder and the abdominal wall, and thus prevents the proper contraction of the bladder on the urethral opening, which is necessary to a complete emptying of the organ. He argues that nature intended the urine to discharge below the pubes and any attempt to make it go otherwise carries its own penalty with it. Further, he maintains that the perineal opening is more likely to close spontaneously, and to remain closed, than the suprapubic one. This contention was combatted by Dr. J. William White in the discussion of the paper before the Philadelphia Academy of Surgery. Dr. White holds that cystotomy is much too frequently resorted to for drainage, as most of these cases could be better treated by the use of the permanent catheter, which could be safely retained for six weeks if necessary. [We have lately in the wards of the Montreal General Hospital been able to demonstrate the truth of this statement of Dr. White's]. But should drainage be rendered necessary by urethral obstruction, a perineal drain would give the best prospect of relief; on the other hand should there be obstruction due to prostatic disease, suprapubic cystotomy would give the best outlook for relief.

Dr. White also disputed Dr. Dandridge's statement that suprapubic cystotomy was much more dangerous than the perineal operation. His (Dr. White's) statistics proved that while it was more dangerous in children it was not so in adults, while in old persons the suprapubic method was safer. He also denied that there was more danger of a permanent suprapubic fistula, while he admitted that all artificial drainage openings were a nuisance to the unfortunate patient. Our own experience is that for the relief of urgent retention, suprapubic puncture is preferable to prolonged efforts to introduce a catheter over an inflamed prostate, and is almost absolutely safe at any age; but this apart.

(2) *Cystotomy for Stone or Tumours of the Bladder.* In this condition both Dr. Dandridge and his friendly critics agree with Thompson, that crushing is much preferable to cutting in the great majority of cases. But there is always a residue, as Dr. Keys points out, in which opening the bladder is necessary for the complete removal of the stone, e.g., (1) when the stone is excessively large and an oxalate (2) when it is encysted, (3) when it is complicated by tumour, (4) when it has some foreign body as a nucleus. In these cases it does seem that the suprapubic route is preferable to the perineal, except in the case of children. One might think of Dr. White's suggestion to crush through a perineal median incision.

Prostatectomy, complete or partial, was generally looked down upon in the discussion, the feeling being that it had been overdone and that the results were not commensurate with the risks. Hence the revival Bottini's operation, or the modification of it recently proposed by Guiteras, of New York. This blind use of the galvano-cautery in a place (the prostate) exposed to decomposing urine and especially prone to septic absorption, seems to us to be, *a priori*, an unsurgical procedure. Suprapubic prostatectomy, if one has no faith in castration and catheterization cannot be carried out, seems much preferable to even the modern substitutes for Bottini's operation.

One thing appears certain so far as can be gathered from this able paper and the discussion of it, and that is that the suprapubic operation in properly selected cases has a future before it and will well repay the attention of thoughtful surgeons.

Sterilization of Silk Ligatures and Sutures.

HAYLER. "Sterilization of Silk Ligatures and Sutures."—*Centralblatt für Chirurgie*, No. 5, 1899.

Dr. C. Hayler, of the Basel clinic, gives his experience with silk ligatures and sutures. He maintains that it is impossible to use silk, which has been sterilized by boiling only, in surgical operations. He admits

that boiling will sterilize it, but proves that if this same silk is drawn through the properly sterilized hands of the operator, as in tying a ligature or suturing a wound, it becomes infected. But if this boiled silk is kept in a solution of corrosive sublimate in alcohol, or boiled in this solution alone for a few minutes, it will not become infected, even though the hands using it are not very clean. It would seem to an outsider as though clean hands could not infect sterile silk, and that the inference to be drawn from the infection was that the hands were not sterile. However, if silk has such an affinity for sublimate that subsequent soaking in boiled water or washing in alcohol will not remove the sublimate from its fibres, as Dr. Hayler asserts, then by all means keep it in sublimated alcohol. Our hospital experience shows that silk sutures are much more likely to be followed by stitch abscesses than some non-absorbent material—such as silk-worm gut,—while the same silk gave no trouble when buried as a ligature and therefore exposed to no further infection. It does seem as though the skin of a patient would only remain aseptic for a certain period, say five days, and that then the fibres of the sutures conveyed the infection through the skin. We shall take an early opportunity of testing Dr. Hayler's contention that this would not have occurred if the silk had previously been sublimated. This subject is one of great importance to the general practitioner in his surgical work for he can more readily procure and sterilize silk than any other material, and it is well that he should be able to feel perfectly safe with it. We will, therefore, in a future number, give our readers the benefit of our observations upon it.

J. M. Elder.

Ophthalmology.

UNDER THE CHARGE OF FRANK BULLER,

Diseases of the Eye.

TROUSSEAU. "Eczema of Eyelids and its Treatment."—*Archives d'Ophthalmologie*, February, 1899.

RÆHLMANN. "Blepharitis Acaria."—*Klin. Monatsblt. für Augenheilkunde*, February, 1899.

Trousseau groups eczema of the eyelids into (1) that of medium intensity, (2) the acute irritable form, and (3) chronic eczema. For the eczema of medium intensity, he applies lukewarm compresses of cyanide of mercury, 1-10,000, for half an hour morning and evening, and if there be any conjunctivitis the same solution is instilled into the eyes. This condition generally results in cure, but if it remains stubborn an ointment is applied, at first of simple lard and later of zinc oxide or yellow oxide of mercury of a strength of 1 in 40. The contra-indication for the ointment is the presence of ulcers or much irritation.

For the acute type Trousseau never applies any strong antiseptic, but merely warm water for cleansing. He uses tepid water in the morning and a cataplasm at night. When the irritation has nearly disappeared, boracic acid or bicarbonate of soda is applied as a compress for twenty minutes morning and evening, then later cyanide of mercury is substituted. Ulcers, when present, should be touched with a two per cent. solution or dusted with a powder composed of talc, salicylate of bismuth or bicarbonate of soda mixed with prepared chalk, the lids being closed and absorbent cotton applied over their edges to prevent any powder getting into the eyes. The lids must be kept closed until morning. If there be much itching of the lids, they must not be scratched, but may be touched with nitrate of silver or cleansed with solutions of bicarbonate of soda or weak alcohol. When the disease has been brought under control, treat it as indicated for the type of medium intensity.

In the chronic, torpid variety, compresses of cyanide of mercury are applied for twenty minutes morning and evening, after which an ointment of yellow oxide of mercury, resorcin, carbolic acid, or lanolin and oil of cade with a base of vaselin, is applied at night.

In blepharitis acaria the demodex folliculorum is the cause of the disease. On epilating the lashes and examining them in water on a slide with a low power the male and female parasites, eggs, embryos,

excreta, etc., can be seen adhering closely to the shaft of the hair. The subjective symptoms are itching and falling out of lashes.

Objective symptoms are usually present and consist of hyperæmia of the inner zone of the lid-border and also of the outer border and, generally, localised hyperæmia of the conjunctiva. Frequently a sticky secretion hangs in clumps to the bases of the hairs. This disease exists in twenty-five per cent. of the cases of trachoma.

Treatment consists in the application of an ointment of one part of balsam of Peru to three parts of lanolin, under which rapid cure ensues.

Diseases of the Conjunctiva.

DE WECKER (Paris). "Mode of Origin of Conjunctivitis."—*La Clinique Ophthalmologique*, January 10, 1899.

COPPEZ (Brussels). "Relation of Follicular Conjunctivitis to Adenoid Vegetations of the Naso-Pharynx."—*Archives d'Ophthalmologie*, January, 1899.

KUHNT. "Curative Value of the Operative Treatment of Granular Conjunctivitis."—*Zeitsch für Augenheilkunde*, Bd. I.

GALEZOWSKI. "Excision of Conjunctival Cul-de-Sac in Granular Conjunctivitis."—*Recueil d'Ophthalmologie*, January, 1899.

SALVA. "Spontaneous Conjunctival Hæmorrhage."—*Annales d'Oculistique*, March, 1899.

PECK, E. S. (New York). "Argonin and Protargol in Blenorrhœa Neonatorum."—*Medical News*, January 21, 1899.

Dr. Wecker holds that the conjunctiva is always infected secondarily to the lids on which the germs at first develop; hence the indications for treatment are early sterilization of the edges and skin surfaces of the lids with cyanide or oxycyanide of mercury. In the newly-born infant this should be done immediately after the first bath.

Coppez insists on what has already been frequently stated in regard to the close relation between adenoid growths of the naso-pharynx and follicular conjunctivitis. Upon the removal of these growths the eye condition rapidly improves and is easily amenable to treatment.

Kuhnt, in his article on trachoma, advises the use of drugs in all mild cases and in districts where the disease is not endemic. If the cornea seems in danger and the condition does not improve under the above treatment, he early resorts to the use of the galvano-cautery or the expression of the granules with the roller forceps. If expression fails, he tries excision.

Galezowski's favorite treatment is the mitigated nitrate of silver

stick which consists of nitrate of silver and nitrate of potassium. If this is unsuccessful, he excises the conjunctival cul-de-sac from angle to angle of the lid, being very careful to excise *only* the conjunctiva and scrupulously to avoid the tarsus.

Salva's case was a hysterical girl who had had conjunctival hæmorrhages for two years, which latterly occurred as frequently as every two hours, by night as well as by day. Menstruation was regular and all the body functions normal. The blood came from no particular spot, but apparently filtered through the entire surface of the conjunctiva. Cure was obtained after several cauterisations with a 10 per cent. solution of protargol, thrice daily.

Peck speaks in highly laudatory terms of both argonin and protargol, holding that they are the first drugs introduced to replace nitrate of silver which can really accomplish what the latter drug does, i.e., destroy the gonococcus. Protargol contains 8.3 per cent. of silver, nitrate of silver contains 6.35 per cent., and argonin 4.3 per cent. Argonin in a two per cent. solution kills the gonococcus in a short time, whilst protargol, which is more irritating, is at the same time more rapid in its germicidal action. He recommends protargol highly in ophthalmia neonatorum, as it produces more favorable and earlier results than nitrate of silver. In some cases the gonococcus disappeared in two weeks, in none later than four weeks, whereas with nitrate of silver the average persistence of the germ was five weeks. Protargol is used at the outset in a strength of ten per cent. freely irrigated over the conjunctiva three or four times daily, then, as the secretion gets less, thinner, and shreddy, the strength of the solution is reduced to two per cent. and it is used less frequently. Every other day the secretion should be examined for gonococci, and only after the absence of the germ for a full week should the eye be regarded as safe enough to be in contact with the mother.

In gonorrhœal ophthalmia in the adult protargol was used at first in a strength of fifty per cent. two or three times daily and allowed to remain in the eye three minutes. Later, a five per cent. solution was used and allowed to remain in the eye fifteen minutes. The last solution was the most satisfactory.

Hypopyon-Keratitis.

BONIVENTO, Giov. "Hypopyon-Keratitis Treated with Airol."—*Klin. Ther. Wochenschrift*. 1898.

ZIRM (Olmütz). "Treatment of Hypopyon-Keratitis."—*Weiner Klin. Wochensch.*, November 9, 1898.

Bonivento's report of his treatment of forty cases of hypopyon-keratitis with airol appears very convincing as regards the value of the drug

in this disease. Airol acts especially by diminishing injection, causes no pain, is odourless, non-toxic and harmless. It is dusted into the eye twice daily. It is an almost certain preventive of corneal perforation and also cuts short any accompanying purulent conjunctivitis and dacryocystitis.

Airol is composed of bismuth, gallic acid and iodine, which latter is broken up when the drug comes in contact with the tissues. Prolonged use of airol does not give rise to eczema as in the case of iodoform.

Zirm treated hypopyon-keratitis in much the same manner with airol and with good success. He, however, found airol rather irritating and accordingly substituted xeroform with very gratifying results. He dusted xeroform over the cornea thrice daily and used an emulsion of the drug for the lachrymal sac. When necessary, he also used the galvano-cautery.

Iritis due to Nasal Disease.

LEFRANCOIS (Cherbourg). "Iritis of Nasal Origin."—*Recueil d'Ophthalmologie*, March, 1899.

The patient was a young woman who suffered from kerato-iritis. She had a slight leucorrhœa and had not menstruated for five months, though not pregnant. Under treatment the uterine trouble disappeared, but the ocular condition remained unchanged. She had a fœtid, mucopurulent, bloody discharge from the nose, and on this condition being treated, the eye trouble rapidly improved, the vision in a month being one-half the normal and in three months normal. Lefrancois considers the uterine condition as a predisposing, and the nasal as an exciting, cause of the disease.

Choroiditis of the Macular Region.

BURRI. "Subconjunctival Injections of Sodium Chloride in Macular Choroiditis."—*Zeitsch für Augenheilkunde*, Heft I., Bd. I.

DARIER (Paris). "Treatment of Macular Choroiditis."—*La Clinique Ophthalmologique*, March 10, 1899.

Out of seven cases, Burri got improvement in all and very brilliant results in three. Cocaine is instilled and then a Pravaz syringe of sterilized sodium chloride solution is injected under the conjunctiva every day. After the injection a moist compress is applied over the eye and the patient remains in bed for four hours. The strength of the solution may be two, four or ten per cent.

Darier claims very good results from the injection of cyanide of mercury subconjunctivally. The strength of the solution is 1 to 5,000 of the cyanide in a 1 in 50 salt solution.

Optic Nerve.

WINGENROTH (Karlsruhe). "Optic Neuritis following Influenza."—*Klin. Monatsbl. für Augenheilkunde*, March, 1899.

CRAMER. "Optic Neuritis as the Result of a Blow on the Head."—*Gräfe's Archiv*, xlvii, Ab. 2.

DEWECKER. "Danger in the Specific Treatment of Optic Atrophy."—*Annales d'Oculistique*, February, 1899.

Wingenroth's report of three cases of optic neuritis is interesting in that in all three a syphilitic cause was clearly excluded and influenza alone could be considered as the etiological factor. Despite this, all ordinary forms of treatment failed and cure was only obtained by thorough mercurial inunction. During the treatment, if the patient showed any increase in weight, the amount of ointment was forthwith increased.

Cramer's case is notable in that fracture or lesion of the base of the brain could be excluded. The patient fell forward, struck his forehead, and was unconscious. Ophthalmoscopic examination revealed double optic neuritis. Any chance of a cerebral tumour being the cause of the neuritis was finally excluded. Cramer concludes that the contusion set up a tuberculous meningitis which gave rise to the optic neuritis. Cramer then mentions the statement of Bergmann that the meningeal symptoms following an injury closely resemble those of tuberculous meningitis.

DeWecker strongly inveighs against the specific treatment of optic atrophy in cases of *tabes dorsalis*, as he holds that it is useless and indeed does harm.

Glaucoma.

WALTER (Odessa). "Internal Treatment of Glaucoma."—*Die Ophthalmologische Klinik*, November 5, 1898.

ABADIE (Paris). "Nature and Treatment of Glaucoma."—*Archives d'Ophthalmologie*, April, 1899.

ROGMAN (Gand). "A Glaucomatous Family."—*La Clinique Ophthalmologique*, April, 1899.

Walter, acting on the theory of the relation between glaucoma and gout, treats his cases by the administration internally of piperazine. One gramme is given daily. At the same time he does not ignore the local treatment, but holds that the internal treatment is a very valuable adjunct to the other.

Abadie, in his article, strongly avows the vasodilatation theory and

advises excision of the superior cervical ganglion for the cure of simple chronic glaucoma.

Rogman's series of cases of glaucoma in one family are very suggestive. The grandmother had fulminant glaucoma, the mother had acute glaucoma at the age of sixty-two, and of the latter's seven children, three out of seven sons had prodromata, in one followed by an acute attack. The disease appeared at an earlier age in each of the succeeding generations.

Ocular Therapeutics.

ULRI and FREZALS. "Researches into the Penetration of Aqueous Collyria of Potassium Iodide into the Eye."—*Archives d'Ophthalmologie*, January, 1899.

"Absorption of Collyria by the Cornea."—*Ibid.*, March, 1899.

"Aqueous Collyria of Salicylate of Sodium."—*Ibid.*, February, 1899.

SCRINI. "The Oily Collyria."—*Archives d'Ophthalmologie*, January, 1899.

STRAUS (Brooklyn). "Experiments as to the Germicidal Properties of Certain Eye Salves."—*Archives of Ophthalmology*, January, 1899.

Badal has been using collyria of iodide of potassium in connection with the internal administration of the drug. Ulri and Frezals, as a result of their investigations on rabbits' eyes, find that applied to the conjunctiva, iodide of potassium does penetrate into the aqueous humour but not into the vitreous until it has entered the general circulation. If taken internally in medium doses the media of the eye do not give any iodide reaction. Used internally and also at the same time as a collyrium, a much greater quantity enters the aqueous.

In the second article quoted above, Ulri and Frezals state that absorption of aqueous collyria by the eye takes place through the cornea into the aqueous humour and only in infinitesimal quantities through the conjunctiva. The cornea does not absorb oily substances, but only after they have been first dissolved by the tears.

As regards the aqueous collyria of salicylate of sodium, they find that using this drug as an aqueous collyrium, a larger amount of it can be thus caused to penetrate the eye and reach the vitreous than by ingestion. The practical application has thus far been very limited, but the results are promising.

Scrini's article on oily collyria is the second which he has published. He holds that increased power and rapidity of action are obtained by using many drugs in an oily solution, e.g., eserine. He has experimented with duboisine, homatropine, scopolamine, daturine, cocain, and holocain.

Straus' experiments with eye-salves on pyocyaneous, staphylococcus aureus, and bacterium coli are of value. Most of the salves diminished the vitality of bacteria, but act as germicides only after several days of continuous application. The following is the list in order of effectiveness:—

Iodia, 5 and 10 per cent.

Iodine, 5 and 10 per cent.

Hydrarg. oxid. flav., 2 per cent.

Iodoform, 5 and 10 per cent

Airol, 5 and 10 per cent.

Thioform, 5 and 10 per cent.

Aristol, 5 and 10 per cent.

Vaselinum alb. pur.

The great point in favor of the salves is that the prolonged continuous action of the drugs is assured.

J. W. Stirling.

Reviews and Notices of Books.

THE NATURAL HISTORY OF DIGESTION. By A. Lockhart Gillespie, M.D., F.R.S., Edin., Lecturer on Materia Medica and Therapeutics in the Medical School of the Royal Colleges, Edinburgh. Illustrated by Figures, Diagrams and Charts. London, Walter Scott, Limited, 1898.

The present work, one of the Contemporary Sciences Series, gives the most complete account of digestion yet published. It is comparative in the boldest sense of the word and deals not only with the digestive processes in animals in different groups, but also in plants. The term "digestion" is used in a sense sufficiently wide to include such subjects as "absorption," "the micro-organisms of the alimentary tract in the higher mammals," "the senses in relation to digestive metabolism, dietetics and animal heat," with, of course, a discussion of foods. With increasing specialization, there is danger of losing sight of general relations, and the ever-growing mass of details may become a real impediment to mental digestion. A mere glance at the headings of the chapters in such a work tends to keep related things in their true perspective.

Naturally, this work is made up largely of material gathered from other publications and sufficiently recast to suit the author's general purpose. The writer is, however, not a mere compiler or bookmaker, but has worked upon the subject himself as an original investigator. Although we have now in our English language works on physiology as a whole, the several departments of which have been treated by well-known specialists, there is still room for such books as the present, and will be till we have a cyclopedia of physiology, an undertaking which will scarcely be justified till the profession realises more clearly than now the extent to which permanent advance depends on knowledge of the functions of the normal animal. Had the world been in possession of the very knowledge we possess to-day in such an important department as pathology, if it is possible to conceive of such a thing, while the conception of vital processes remained such as they were even one hundred years ago, the interpretation and practical application would no doubt have been failures. Yet, in spite of the lessons of bacteriology (the contributions of pure scientists in the first instance) medical men are still prone to belittle what is not capable of immediate application, though a notable change is observable and the heaven is working from above downwards from the broader, more

penetrating intellects down to the rank and file of the profession. In the meantime, the physiologist and physiology share the fate of all inadequately recognized workers and works. All the more gratified should we be for a book which must have as yet a limited sale and whose author must work for some other source of satisfaction, paragrapher, or the books of the crowd—medical or other.

The illustrations, largely borrowed, are of a fair order of merit. Though some are published for the first time, most of the charts, which are somewhat numerous, are original. It was impossible that any one man should handle such a mass of material in an ideal fashion, nevertheless we have in "The Natural History of Digestion" a most comprehensive and valuable work, for which we should be grateful all the more as amid the abounding plethora of publications in periodicals whose names are legion it is well that the results of chief value should be gathered together in book form. The price of the work is very moderate.

W. M.

ELECTRO-HÆMOSTASIS IN OPERATIVE SURGERY. By ALEXANDER J. C. SKENE, M.D., LL.D., Professor of Gynæcology in the Long Island College Hospital, Brooklyn, N.Y., etc., etc.

Professor Skene has for some time been known as an advocate and exponent of hæmostasis by heat obtained by the use of electricity, and this book of 173 pages contains a full and thorough discussion of the arguments in favor of the method and a description of the instruments and appliances by which it is to be used.

In the main, the author contends that there are many instances of the trouble which silk ligatures have caused in the way of abscesses, of the failure of catgut to hold arteries, of the difficulty of complete sterilization of the latter, and of the complete failure of ligatures of any material to completely close mucous tracts such as the Fallopian tube and appendix vermiformis. To the surgeon of long experience, the objections to silk will be admitted to be well grounded. As regards catgut carefully sterilized by the modern chinol or formaline method, few will be prepared to accept them. The patency of mucous tracts after ligature the author proves beyond a doubt, by the results of microscopic examination of specimens made by himself and others.

The appliances consist of a series of pressure forceps and clamps of various kinds and sizes suited to the requirements of ovarian and other pedicles; of the appendix vermiformis; of piles, etc. The source of electricity may be either a battery (the least reliable), or much better, a street electric light or power current modified by a suitable transformer, and measured by an amperemeter, to furnish the requisite degree of heat. The necessary effect is produced by a degree of heat not

exceeding 180° Fahrenheit, so that the tissues compressed by the forceps or clamp shall not be charred, but simply thoroughly dried. Microscopic examination of tissues thus treated shows that they are completely disorganized; no trace of their structure can be recognized.

By this method Dr. Skene has done over two hundred abdominal sections and many vaginal hysterectomies without a single instance of subsequent hemorrhage, and, he claims, with much better ultimate results than by the ordinary ligature materials. The length of time application of the heat is necessary is not more than from half a minute to two or four minutes, according to the thickness of tissue to be dealt with.

The book is admirably illustrated with half-tone pictures showing the various clamps, forceps, batteries and transformers, and the results on the tissues. It cannot fail, we predict, to produce a profound impression on the surgical world. It will not be out of place here to allude to the unreliability of angiotripsy by the methods of Doyen and Tuffier, of Paris, as shown by the recent reports of cases on the human subject and experiments on lower animals.

Dr. Skene's book is published by the Appletons and is a very creditable production.

THE INTERNATIONAL MEDICAL ANNUAL AND PRACTITIONER'S INDEX. A Work of Reference to Medical Practitioners. 1899. Seventeenth Year. New York : E. B. Treat & Co.

The Annual for 1899 appears in much the same dress and in the same form as in past years. There is an increase of fifty pages in the reading matter. Of the thirty-two contributors, fourteen are new names this year. An effort has been made, as in former editions, to have the most important subjects of the year treated in original contributions by well known authorities thereon. Among others we notice an article on Practical X Ray Work, by Dr. R. Norris Wolfden, which should be of great value to anyone who has not a practical knowledge of electricity and yet desires to make use of this means of diagnosis in office work. "Gleet," by E. Hurry Fenwick, contains directions for the use of the urethroscope and two coloured plates depicting the normal urethra and pathological conditions met with in this disease. Priestly Leech describes some of the newer methods of uniting divided intestine, illustrating Halsted's method by three plates. "Mastoid operations" are fully dealt with in an article by J. Dundas Grant. Kocher's diagrams of the sensory distribution of the spinal nerves are reproduced by coloured plates in Thorburn's article on the "Surgery of the Spinal Cord." Seneca D. Powell, in the article on "Skull Surgery," describes his own method of performing craniectomy and illustrates it with three plates. The "Atlas of Bacteria Pathogenic in the Human Subject," part of which appeared in the Annual for 1898, is completed in the present

volume. The usual report of legal decisions throughout the year is inserted at the back, this being the American edition the cases are those affecting American practitioners.

G. G. C.

REPORT OF MINNESOTA STATE BOARD.

This report deals with the work of the Board during the past two years. During this period the development of the laboratory work under the able direction of Dr. F. F. Westbrook has been most rapid and complete. In addition to the unusually large amount of routine diagnostic work, much valuable scientific research has been accomplished. The existence of a very active veterinary sanitation department in connection with the Board is a special feature which we would like to see adopted by many other health boards. The careful management of the executive work of the Board under Dr. H. M. Bracken, the secretary, as shown by the special report, is evidently of a very high order. Almost the only criticism we have to offer is that the plan followed of combining a number of quarterly reports in one volume, makes rather difficult reading.

W. J.

TRANSACTIONS OF THE PATHOLOGICAL SOCIETY OF PHILADELPHIA. Vol. XVIII. Containing the Reports of the Proceedings of the Society from October, 1895, to June, 1897. Philadelphia. 1898.

No words of ours are necessary to commend the Transactions of this old established Pathological Society, suffice it to say that the volume before us is thoroughly worthy of the reputation of that Society, not merely in its valuable contents, but also in its illustrations and general appearance. It is, if possible, in advance of anything yet published by any pathological society on this continent—the series of volumes, in fact, of this Society are usually available for reference in connection with morbid anatomical conditions, and in this respect run very close to the Transactions of the Pathological Society of London.

J. G. A.

A TEXT-BOOK UPON PATHOGENIC BACTERIA FOR STUDENTS OF MEDICINE AND PHYSICIANS. By JOSEPH MCFARLAND, M.D. Second Edition. Philadelphia: W. B. Saunders, 1898.

Despite not a few errors, the first edition of McFarland's Pathology was deservedly popular with the medical student on account of its easy and interesting style, its excellent illustrations, and admirable get up. The second edition is a marked improvement upon the first in very many respects. It has grown not a little in the process of revision, and new chapters have been added so as to bring the work well up to date.

J. G. A.

Society Proceedings.

ONTARIO MEDICAL ASSOCIATION.

The nineteenth annual meeting of the above Association was held in the Normal School Building, Toronto, June 13th and 14th, 1899.

The president, Dr. W. J. Gibson, Belleville, occupied the chair.

The following gentlemen were introduced to the Association:—Dr. Wilding, delegate from the New York State Medical Society; Dr. Christian Fenger, Chicago; Dr. Bowditch, Boston; Dr. J. C. Wilson, Philadelphia, and Dr. D. W. Montgomery, Los Angeles, Cal.

A Case of Muscular Dystrophy was presented by Dr. Ingersoll Olmsted, Hamilton, which proved to be an orthodox case of its kind and excited a good deal of interest in the members present.

Relapse in Typhoid Fever. Dr. J. C. Wilson, in reading this highly interesting paper, took as his "working hypothesis" the condition of the gall bladder at the time of the occurrence of the relapse. The cause of the relapse was due to the sudden discharge of the accumulated contents of that cyst, which contained large quantities of the bacilli, into the intestine, thus producing the reinfection and the relapse.

The paper was ably discussed by Drs. McPhedran and Jno. L. Davison.

On the afternoon session being convened, the Hon. G. W. Ross, minister of education, delivered in his usual eloquent style an address of welcome to the Association. He eulogized the medical profession for the assistance it was to the department in maintaining the proper scientific spirit in the country. At some length he dwelt on the subject of tuberculosis and health in the public schools, as also the questions of examinations at too early an age and home lessons, to which he was opposed, as being injurious and harmful. He thought the country must produce men strong in mind and body, men with nerves that will endure the strain of public life.

The President, Dr. Gibson, then delivered the annual presidential address, and in a very practical manner discussed serum therapy, tuberculosis, Dominion registration, over-pressure in public schools and improvements in medical teaching. At its close he was tendered a vote of thanks by the Association.

SYMPOSIUM ON TUBERCULOSIS.

The Sanitarium Treatment of Pulmonary Tuberculosis was very ably presented by Dr. Vincent V. Bowditch, of the Sharon Sanitarium,

Boston. The treatment adopted there consisted in abundance of fresh air, judicious exercise, pulmonary gymnastics and calisthenics. The results achieved at Sharon mean that sanatoria should be near all the large cities and towns.

Dr. N. A. Powell, Toronto, spoke of the earliest diagnosis and selection of cases for sanatorium treatment.

Dr. T. F. MacMahon discussed home treatment and prevention of tuberculosis.

Dr. Charles Sheard, M. H. O., Toronto, took "Care and Prevention" as his text.

Dr. M. I. Beeman, Newburgh, Ont., spoke of more bacteriological work being done by the general practitioner.

Dr. P. H. Bryce, secretary of the Provincial Board of Health, dealt with the establishment of sanatoria from the governmental standpoint.

Dr. McConnell told of three years experience in New Mexico.

Dr. John Hunter, Toronto, thought every patient's chest should be examined, no matter what the disease for which he consulted the physician.

Dr. Wm. Oldright said disinfection should be carried out in all cases after habitation by a consumptive.

Dr. Playter spoke of the use of ozonized air in the treatment.

Dr. Coventry thought *La Grippe* was responsible for laying the foundation of many of these cases.

Dr. Price Brown emphasized the importance of the general practitioner being familiar with the use of the rhinoscope and the laryngoscope.

A strong resolution of sympathy for Dr. J. E. Graham (since deceased) in his present illness was unanimously adopted.

BANQUET. The annual banquet was held in the evening at McConkey's restaurant, the president presiding.

SECOND DAY.

In the surgical section, Dr. Wishart, London, was elected chairman and the following papers were read and discussed.

Inguinal Hernia—Dr. William Oldright.

Treatment of Hernia—Dr. Angus McKay, Ingersoll.

A Peculiar Gynæcological Case—Dr. Harrison, Selkirk, Ont., in which a woman had passed a glass stylet penholder into her womb to induce an abortion. A subsequent exploratory abdominal operation was performed and the stylet was found in the region of the spleen. The woman recovered.

The Seminal Vesicles in Health and Disease—Dr. E. E. King.

A Note on Kocher's Method of Radical Cure of Hernia—Femoral and Inguinal—Dr. Primrose, Toronto.

Fibrinous Rhinitis—Dr. D. J. Gibb Wishart, Toronto.

Electrolysis and Cataphoresis in the Treatment of Inoperable and Recurrent Malignant Disease—Dr. R. K. Frazer, Thamesville, Ont.

On Some Points in the Diagnosis of Eye Affections—Dr. R. A. Reeve, Toronto.

In the medical section, Dr. Russell, Hamilton, was elected chairman, and the following papers were read and discussed :

Ophthalmology and the General Profession—Dr. G. H. Burnham.

The Insanity Plea in Medical Jurisprudence—Dr. J. Russell.

Notes of a Case of Torticollis—Dr. D. C. Meyers, Toronto.

Acute Diabetes—Dr. A. F. McKenzie, Monckton, Ont.

Treatment of Eczema—Dr. Graham Chambers, Toronto.

The Present Status of Ergot in Obstetric Practice—Dr. Kenneth McIlwraith, Toronto.

GENERAL SESSION.

A Case of Coccidial Infection. Dr. D. W. Montgomery, Los Angeles, gave a clear description of this case, which occurred in a young German of twenty-one years, who came to California at three years of age.

DISCUSSION IN SURGERY. Dr. Christian Fenger, Chicago, read an admirable paper on the diseases of the kidney amenable to surgical treatment. He prefaced his remarks with a description, historical, of the origin of the surgery of the kidney and ureter, alluding to the immense amount of literature which had been produced on the subject within the last decade—viz., something like nine hundred papers.

He emphasized the importance of examination of the urine in all cases in operating on the kidney, and said that it was particularly important to estimate the quantity of urea. Then he took up the different diseases of the kidney for which we operate and in a classical manner described each and the indications for and against operation.

ELECTION OF OFFICERS.

President—Dr. J. E. Graham, Toronto.

First Vice-President—Dr. A. H. Wright, Toronto.

Second Vice-President—Dr. M. I. Beeman, Newburgh, Ont.

Third Vice-President—R. J. Trimble, Queenston, Ont.

Fourth Vice-President—A. F. McKenzie, Monckton, Ont.

General Secretary—Harold C. Parsons, Toronto.

Assistant Secretary—E. H. Stafford, Toronto.

Treasurer—George H. Carveth, Toronto.

The special committee appointed at the last meeting re Hospital Abuse brought in a very strong report at the evening session, which was read by Dr. W. J. Wilson, Toronto. This provoked an animated discussion and was unanimously adopted by the Association.

After the reception of other reports the meeting adjourned to again meet in Toronto in 1900.

THE
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ON THE INFECTIOUSNESS OF TYPHOID EXCRETA.

Within a few months following the first full study of the typhoid bacillus by Gaffky, in 1884, numerous observers demonstrated, as they thought, that the typhoid bacilli are recognisable without any great difficulty in the stools of typhoid patients and this at all periods of the disease, and these observers proving, as they seemed to, that the bacilli were thus discharged in great numbers into the fæces, afforded so ready an explanation of the dissemination of the disease that ever since it has been an article of universally accepted belief that the stools are the main agent in the spread of typhoid.

This is but one of the numerous examples which might be given of bacteriological mistakes or half truths being distinctly useful in their time, for now there is little doubt that what these early observers really saw in the stools were colon bacilli—bacteria at that time little known, but presenting a close similarity to the typhoid bacillus in very many respects. When the points of similarity and distinction between these two forms were more fully studied, it was found that, as a matter of fact, it is extremely difficult to isolate typhoid bacilli from the fæces. Walthelet, in 1895, using the most delicate methods of differentiation then known, could only obtain bacilli in the stools of four out of twelve typhoid patients.

That same year Elsner perfected a new medium for the separation of typhoid and colon bacilli, a medium consisting of potato-gelatine, to which 1 per cent. of potassium iodide had been added; this is not perfect, for some varieties of the colon bacillus in their mode of growth upon it are scarce to be distinguished from the *B. Typhi*; nevertheless, with this medium a great step in advance has been made.

Since then Philip H. Hiss, of New York, has perfected a still more delicate method, under which at no time would it appear possible to confuse the two forms. Unfortunately, extreme care is requisite in the preparation of Hiss's media, and they are by no means likely to come

into general use. But by these two methods of Elsner and Hiss the early deductions reached by false methods have been shown to be in the main correct.

Pollak (Prague, 1896.), Jemma (Genoa, 1897.), Richardson (Boston), and Horton Smith (London), have together examined 40 cases of enteric fever, in all of which they have, if not in every sample examined nevertheless eventually, discovered the bacilli during the first two weeks of the disease. On the other hand, after the first two weeks the bacilli are rarely to be obtained. Horton-Smith* has more especially made a study of this matter and quotes several cases to this effect. Lazarus could only find the bacilli in the stools of three out of sixteen convalescents, Richardson in one out of thirteen.

It would consequently seem evident that, judged by our present methods, the typhoid bacillus is only present in the *fæces* in considerable numbers in the earlier stages of the disease and is rare in the stools of convalescents. Nevertheless, it must be remembered that even at the present time our methods for the differentiation of the typhoid from the colon bacillus are not perfect and these facts should not in any way lessen the care to be taken in the disinfection of typhoid excreta.

Indeed, certain further observations made from '96 onwards demand that increased care be taken with the excreta in general, for it is possible that the urine may contain enormous quantities of the bacilli. This was suggested long ago, but the first accurate paper upon the subject was one by Horton-Smith in '96. He showed that in some, though not in all, cases of typhoid fever, true typhoid bacilli occur in the urine; that when they occur they are present in considerable numbers, and also that their occurrence is towards the end of the disease, during the third week or later. These results have since been amply confirmed by Richardson, Petruchsky, Blumer and others.

Summing together Richardson, Horton-Smith and Blumer's cases, we find that, of 60 cases observed, positive results were obtained in 15, or, in other words, typhoid bacilli are present in the urine in about 25 per cent. of the cases of this disease, while in about 5 per cent. they are present in such enormous quantities as to render the urine turbid.

There are certain very interesting points in connection with this appearance of the bacilli in the urine. The earliest day on which they have been discovered so far has been the 15th, on the other hand they have been found as late as the 39th day and 10 days after final defervescence; in one case they were noticed during a period of 70 days, far into convalescence, and several patients were actually discharged from St. Bartholomew's still exhibiting the phenomenon. The fact that there may be enormous numbers in the urine and at the same time no bacilli

* The Lancet, May 20th, 1899.

are to be obtained from the blood, would indicate that we have not here to deal with a simple filtration or separation of the bacilli out of the circulation; there must be a proliferation either within the tubules of the kidney or in the urinary passages in general.

This long persistence in the urinary tract of these microorganisms is on a par with their persistence in the gall bladder and in the neighbourhood of joints, weeks and it may be months after the acute attack has completely passed away.

These observations bring us face to face with what, from a public health point of view, is a very serious problem. In the first place it clearly is no longer admissible to take no care with regard to the disinfection of the urine of typhoid patients. Even, if in only a certain proportion of cases this be infectious, the fact that that proportion is a large one makes it imperative that every care be taken to disinfect the total excreta. In the second place we have to recognize that it is in the late stages of the disease that the urine may be infectious and that this infection may continue far into convalescence. In one case Petruchsky found the enormous number of 172,000,000 bacilli in each cubic centimeter of urine. Indeed, as Horton-Smith points out, the wide contamination of extensive sources of water supply is more easily explicable by means of this infected urine than by the fæces.

It would seem almost impossible to lay down strict rules with regard to the disposal of the urine of those who regard themselves in complete health; it is, however, possible for the physician to order that, until the very last day of their confinement as patients, the urine of those suffering from typhoid should be disinfected; beyond this point it is practically impossible to lay down any rule. Happily, there is still another way out of this difficulty. Richardson (*Journ. Exper. Med.*, 1899, Vol. 4, p. 1) has proved very clearly that 10 grains of Urotropine administered three times a day, leads to the rapid disappearance of the bacilli from the urine. In one case in St. Bartholomew's, under Dr. Gee and Dr. Andrews, treatment for three days with Salol had no effect, the typhoid bacilli were still present in enormous numbers in the urine; when Urotropine was given as above, at the end of 48 hours the urine became and henceforth remained absolutely sterile.

Thus we may well recommend with Richardson and Horton-Smith that all typhoid patients be given small doses of Urotropine, commencing with the third week of the disease.

CANADIAN MEDICAL ASSOCIATION.

TORONTO MEETING.

The thirty-second annual meeting of the Canadian Medical Association will be held at Toronto on Wednesday, Thursday and Friday, August 30th, 31st and September 1st, 1889.

Through the kindness of the Honorable Minister of Education for Ontario, the building of the Education Department has been placed at the disposal of the Association, and in it the meeting will be held. This building is most centrally situated, as the Church Street cars pass the building, and the Yonge Street line is but one block away.

The programme will be of exceptional interest, and the very important subject of Inter-Provincial Registration will receive full discussion at this meeting.

A number of entertainments have been provided for, including a reception and musicale for members and their friends on the first evening; an afternoon tea at the Royal Canadian Yacht Club on the island, and other entertainments. The Association will be the guests of the city of Toronto on Thursday evening, when members and their friends are invited to attend a smoking concert on board one of the large Niagara steamers during a sail of a couple of hours on Lake Ontario. The pyrotechnic display at Exhibition Park will be witnessed from the deck of the vessel. On Friday afternoon the Association will be entertained by the President and Directors of the Toronto Industrial Exposition at Exhibition Park.

There will be an exhibition of instruments, drugs and physicians' supplies in connection with the meeting.

The Committee of Arrangements is making every possible effort to insure a successful meeting, and trusts that there will be a very large attendance. As the meeting is held during the first week of the Industrial Exposition, railway tickets to Toronto and return may be obtained at reduced rates (single fare throughout Ontario).

It has been found impossible to send a circular concerning the Canadian Medical Association to every practitioner in the Dominion, as the lists of addresses are imperfect. It is particularly requested that any reader of this JOURNAL who has not received a circular, and who takes any interest whatever in the advancement of professional and scientific progress, will send a card to the General Secretary, Dr. F. N. G. Starr, 471 College Street, Toronto, from whom he will receive all information.

PROGRAMME.

The President's Address will be delivered on the afternoon or evening of the first day by Irving H. Cameron.

The address in Surgery will be given by W. B. Coley, of New York.

The address in Medicine by J. T. Fotheringham, of Toronto.

In the Skin Clinic, G. Chambers and A. McPhedran, of Toronto, and A. R. Robinson, of New York, and others will take part.

The following is a partial list of the papers to be read:

"The best method of dealing with the consumptive poor." E. J. Barrick, Toronto.

"Floating kidney simulating disease of the ovaries and tubes." A. Laphorn Smith, Montreal.

"Observations on adenoids and enlarged tonsils and their removal, with notes of eighty cases in private and hospital practice." D. J. Gibb Wishart, Toronto.

"The methods and ultimate results of operations for halux valgus." N. A. Powell, Toronto.

"Report of a case of abdominal pregnancy." H. Meek, London.

- "An experience in formaldehyde disinfection." F. Montizambert, Ottawa.
- "An inquiry into the etiology of chronic Bright's disease." A. G. Nicholls, Montreal.
- "Operations for extra-uterine gestation." H. H. Chown, Winnipeg.
- "Tuberculosis in cattle and its prevention." J. George Adami, Montreal.
- "The hospital room in each dwelling." W. J. Telfer, Montreal.
- "The treatment of spina bifida." Geo. A. Bingham, Toronto.
- "Complications and treatment of fractures of the skull." J. M. Elder, Montreal.
- "Recurrent paralysis of the third nerve (Charcot's ophthalmoplegic migraine)." J. W. Stirling, Montreal.
- "Tuberculosis and insurance." J. Hunter, Toronto.
- "(a) Typhoid infection without intestinal lesion; (b) Gastropstosis." A. McPhedran, Toronto.
- "Some observations on the treatment of cancer." A. R. Robinson, New York.
- "Gall-bladder surgery." J. F. W. Ross, Toronto.
- "Typhoid epidemics I have met." Wyatt Johnston, Montreal.
- "The treatment of cataract." R. A. Reeve, Toronto.
- "Christian Science." J. H. Richardson, Toronto.
- "Anæsthesia by chloroform and ether." Wm. B. Jones, Rochester.
- "Treatment of the acute digestive disorders of infancy." A. R. Gordon, Toronto.
- "Rhinoliths." Hubert D. Hamilton, Montreal.
- "Observations on the relations of the thyroid gland to the uterus." C. R. Dickson, Toronto.
- "The question of operation on thyroid tumors." Geo. A. Peters, Toronto.
- "A case of malignant disease of the gall-bladder, simulating hydronephrosis (feeding through the gall-bladder for three days)." F. N. G. Starr, Toronto.
- "An original method for the direct estimation of proteid digestion in the stomach." A. L. Benedict, Buffalo.
- "Nephro-lithotomy." B. L. Riordan, Toronto.
- "The mastoid operation in chronic middle ear disease." J. M. MacCallum, Toronto.
- "Ringworm in Toronto." Graham Chambers, Toronto.
- "The Great Lakes as a health resort." E. H. Adams, Toronto.
- "A case of subcutaneous emphysema." Frederick Fenton, Toronto.

Papers have also been promised by G. H. Burnham, Toronto; A. B. MacCallum and J. J. Mackenzie, of Toronto, and a number of others.

During the meeting, T. G. Roddick, of Montreal, will address the Association on the subject of "Dominion Registration."

The Pathological Museum, in charge of a committee, with A. Primrose as chairman, will add much to the interest of the meeting. A great many specimens have been promised, among which are the following:

- Lower half of rectum removed for cancer. A. L. Smith, Montreal.
- Ectopic pregnancy. H. Meek, London.
- Extra uterine gestation, and others. H. H. Chown, Winnipeg.
- Rarer forms of aneurism. Hearts. Calculi. Disease and fractures of bone, and others. J. George Adami, Montreal.
- Cast of hand from a case of acromegaly. J. M. MacCallum, Toronto.
- Congenital atresia of small intestine. W. B. Jones, Rochester.
- Eustrongylus gigas in kidney of mink. Formaldehyde preparations. Dry anatomical preparations. F. N. G. Starr, Toronto.
- Obstruction of colon by large gall-stone. Superfoetation, abortion at 4th month, 2 sacs 4 months and 6 weeks. Elevated fracture of skull. Heart and aorta. Fusiform dilatation of latter due to syphilitic endarteritis. Carcinoma of prostate with terminal suppurative cystitis. Columnar-celled carcinoma of stomach. Diffuse infiltration from cardiac to pyloric orifices. Solid ovarian tumor (Fibro-Myo-Sarcoma) twelve pounds, etc. W. T. Connell, Kingston.

Lung—Chronic tuberculosis, Acute miliary, Tubercular broncho-pneumonia, etc. *Female Generative Organs*—Adhesions of pelvic organs, Pyosalpinx, Cysts, Tumors, etc. *Bladder Urinary*—Prostatic changes, Sacculation, Calculi, etc. *Bladder Biliary*—Hydrops, Calculi, etc. *Kidney*—Cirrhotic changes, Cysts, Tumors, Hydro-nephrosis and Pyonephrosis, Calculi, Tuberculosis, Anomalies and faults. *Esophagus*—Stricture, New growths. *Stomach*—Ulcer simple, Carcinoma. *Intestine*—Adeno-carcinoma, Colitis, Enteritis chronic, Typhoid changes, Tubercular ulcerations. *Appendices*. *Heart*—Anomalies and developmental faults, Pericarditis, Myocarditis, Myomalachia cordis, Endocarditis, Chronic valvular disease, New growths, Dilation and hypertrophy without valve lesion. *Blood Vessels*—Atheroma, Aneurisms, Ectases, Varicose veins. *Liver*—Abscess, Cirrhotic changes, Venous congestion, Amyloid, Syphilis, New growths. W. Goldie, Toronto.

For further particulars address F. N. G. Starr, general secretary, Biological Department, Toronto.

CONVOCAATION OF MCGILL FACULTY OF MEDICINE.

The total number of students registered in the Faculty of Medicine for the Session 1898-99 was 447, made up as follows :

First Year.....	134
Second Year.....	126
Third Year	93
Fourth Year.....	83
Graduates in attendance	11
	447

PRIZES, HONOURS AND MEDALS.

HOLMES GOLD MEDAL for highest aggregate in all subjects forming the Medical Curriculum, A. H. Gordon, of St. John, N.B.

FINAL PRIZEMAN for highest aggregate in Fourth Year subjects, T. G. McNiece, of Carsonby, Ont.

CLEMESHA PRIZE for Clinical Therapeutics F. J. Nicholson, B.A., of Victoria, B.C.

MCGILL MEDICAL SOCIETY SENIOR PRIZES—First Prize, T. G. McNiece ; Second Prize, F. T. Tooke, B.A.

THIRD YEAR PRIZEMAN, E. R. Secord, Brantford, Ont.

SUTHERLAND MEDALLIST, J. W. T. Patton, Ponds, N.S.

SECOND YEAR PRIZEMAN, R. H. Ker, B.A., Montreal.

SENIOR ANATOMY PRIZE, J. Bruce, B.A., Moncton N.B.

MCGILL MEDICAL SOCIETY JUNIOR PRIZES—First Prize, C. Shearer ; Second Prize, R. P. Campbell, B.A.

FIRST YEAR PRIZEMAN, R. M. Van Wart, B.A., Fredericton, N.B.

JUNIOR ANATOMY PRIZE, R. M. Van Wart, B.A.

The following gentlemen, 64 in number, have fulfilled all the requirements to entitle them to the degree of M.D., C.M., from the University. In addition to the primary subjects, they have passed a satisfactory examination, both written and oral, on the following subjects : Principles and Practice of Surgery. Theory and Practice of Medicine, Obstetrics and Diseases of Women and Children. Pharmacology and Therapeutics, Medical Jurisprudence, Practical and General Pathology and Hygiene.—and also Clinical Examinations in Medicine, Surgery, Obstetrics, Gynaecology and Ophthalmology, conducted at the bedside in the hospital :

Alley, G. T	Charlottetown, P.E.I.
Aylmer, A. L.....	Melbourne.
Bowles, C. T.....	Ottawa, Ont.

Brown, W. F., B.A.	Plattsburg, N.Y.
Browning, W. E.	Exeter, Ont.
Burnett, W. B., B.A.	Sussex, Ont.
Burris, J. S.	Halifax, N.S.
Cameron, L. G.	Cascades, Que.
Casselman, P. C.	Morrisburg, Ont.
Craig, J. E.	North Gower, Ont.
Cumming, W. A.	Buckingham, Que.
Darche, C. E.	Danville, Que.
Drier, N. E.	Woodstock, N.B.
Dyer, E. O., B.A.	Sutton, Que.
Fawcett, R. F. M.	Jamaica, W.I.I.
Fitzgerald, C. T.	Harbor Breton, Nfld.
Francis, B.	Sydney Mines, N.S.
Fuller, G. F. LeR.	Sweetsburg, Que.
Galbraith, W. S.	Lethbridge, N.W.T.
Gillis, E. G.	Indian River, P.E.I.
Gordon, A. H.	St. John, N.B.
Gray, C. F. A.	Montreal, Que.
Greene, E.	Leitrim, Ont.
Higgins, C. P.	Victoria, B.C.
Jackson, F. S.	Westmount, Que.
Jones, F. B.	Montreal, Que.
Jones, D. C.	Maitland, Ont.
Law, R.	Ottawa, Ont.
Levy, A., B.A.	Montreal, Que.
Lineham, D. M.	Calgary, N.W.T.
Loeb, A. A.	Montreal, Que.
Logie, A. E.	Chatham, N.B.
Love, R. H.	Carleton Place, Ont.
Macdonald, J. S.	Montreal, Que.
Mackenzie, C. A.	Toronto, Ont.
McCombe, J.	Dublin, Ireland.
McKay, J. G.	Morewood, Ont.
McIntyre, J. D.	Clifton, P.E.I.
McKechnie, W. C.	Marquette, Man.
McNally, D. A.	Abram's Village, P.E.I.
McNaughton, F. M. A., B.A.	Huntingdon, Que.
McNiece, T. G.	Carsonby, Ont.
Morris, T. E.	St. John, N.B.
Murphy, E. F.	St. John, N.B.
Nash, A. C.	Ogdensburg, N.Y.
Nicholson, F. J., B.A.	Victoria, B.C.
O'Brien, J. R., B.A.	Ottawa, Ont.
Peppers, H. W., B.A.	Fredericton, N.B.
Phelps, S. E.	Steuben, Me., U.S.A.
Rajotte, E. C. F.	Montreal, Que.
Ross, S. A.	Hintonburg, Ont.
Rutherford, R. M.	Hawkesbury, Ont.
Ryan, G. H. W.	Montreal, Que.
Scott, J. F.	Montreal, Que.
Shore, R. A. A., B.A.	Toronto, Ont.
Sutherland, W. H.	Sea View, P.E.I.
Thompson, G. H.	North Sydney, N.S.
Tooke, F. T., B.A.	Montreal, Que.
Trites, C. B.	Petitcodiac, N.B.
Turnbull, T.	Stratford, Ont.

Whillans, H. A.....	Nepean, Ont.
Wilkins, W. A.....	Montreal, Que.
Witherbee, W. D.....	Postdam, N. Y.
Woodley, J. W.....	Rockland, Ont.

The following students, sixty-nine in number, have passed in all the subjects of the Third Year, viz.: Pathology, Pharmacology and Therapeutics, Hygiene and Bacteriology, Medical Jurisprudence, Mental Diseases, Medicine, Surgery and Clinical Chemistry.

Armstrong, J. W., B.A.	Eagar, W. H.	Murray, L. M.
Aylmer, A. L.	Freeman, C. H., B.A.	Mussen, A. T.
Baird, J. A.	Gibson, E. J.	Paintin, A. C.
Ballantyne, C. T.	Gilday, A. L. C., B.A.	Paterson, W. F., B.A.
Bishop, T. E.	Gray, H. R. D., B.A.	Pattee, E. J.
Brennan, F. A.	Hall, A. R.	Patton, J. W. T.
Brown, E. L.	Haszard, C. F. L.	Pope, E. L., B.A.
Burnett, P.	Henry, C. K. P.	Porter, A. S.
Burris, J. S.	Hobert, G.	Rajotte, R. C. F.
Carnwath, J. E. M.	Hill, W. H. P.	Richard, F. A., B.A.
Cartwright, C.	Jardine, J.	Robb, G. W. A.
Charlton, G. A.	Johnston, A.	Ross, H., B.A.
Chisholm, J.	Law, R.	Ross, W. J.
Clemesha, W. F.	Loeb, A. A.	Rowley, W. E., B.A.
Coates, H. W.	Macdonald, J. S.	Rutherford, A. E.
Coffin, J. D.	McConnell, R. E., B.A.	Secord, E. R.
Conroy, R. J.	McDonald, W. F.	Snyder, A. E. W.
Cook, C. R.	McKee, S. H., B.A.	Stevenson, R. H.
Cowperthwaite, W. M.	McNally, D. A.	Todd, J. L., B.A.
Cox, J. R.	Martin, L. W.	Turnbull, J. A.
Crozier, J. A., B.A.	Morris, T. E.	Turner, W. G., B.A.
Donnelly, A. J., B.A.	Morrison, A. S.	Wilson, W. A.
Doull, A. E.	Morrison, G. D.	Wood, D. F.

The following gentlemen, 99 in number, have completed their Second Year examinations, which comprise the following subjects: Anatomy, Practical Anatomy, Chemistry, Practical Chemistry, Physiology, Practical Physiology and Materia Medica:

Baird, J. A.	Conroy, R. J.	Hunter, E. N. McL.
Beadie, W. D.	Costello, A. R.	Jackson, G. F.
Belanger, E. R.	Darche, C. E.	Johnson, R. deL.
Bradley, J. H.	Dixon, W. E.	Johnston, J. L.
Browne, J. G., B.A.	Donaldson, A. S.	Jones, H. A., B.A.
Bruce, J., B.A.	Duncan, J. W.	Kannary, E. L., B.A.
Buffett, C., B.A.	Egan, W. J.	Kendall, A. L.
Butler, P. E., B.A.	Ellis, R. L.	Ker, R. B., B.A.
Callbeck, A. De S. B.	Fleming, J. E.	Leggett, T. H.
Campbell, A.	Freeman, C. H.	Little, H. M., B.A.
Campbell, R. P., B.A.	Fuller, A. T., B.A.	Lunney, T. H.
Campbell, O. E.	Fuller, G. F. L.	MacCarthy, F. H.
Carlyle, D. A.	George, J. D.	Mackay, M., B.A.
Cartwright, C.	Goodall, J. R.	Mackenzie, S. D.
Chisholm, J.	Harley, R. O.	McDiarmid, W. B.
Clemesha, W. F.	Hazard, E. F. L.	McKay, D. S.
Collison, H. McN.	Hope, J. T.	McKay, J. G.
Collison, J.	Howard, A. C. P., B.A.	Martin, E. A.

Meighen, W. A.	Robertson, L. F.	Stentaforde, G. L.
Miller, G. H. S.	Robertson, R. D.	Stevenson, J., B.A.
Morris, T. E.	Robidoux, E. L.	Stewart, C. J.
Mousseau, E. A.	Rogers, H. B.	Symmes, C. R.
Mullaly, E. J.	Russel, C. K., B.A.	Taylor, W. L.
Newcombe, W. E.	Russell, E. M., B.A.	Todd, J. L., B.A.
O'Sullivan, M. T.	Rutherford, C. A.	Townsend, C.
Patterson, A., B.A.	Rutherford, A. E.	Ward, J. A.
Payne, R. H.	Sanders, C. W.	White, E. H.
Penner, E.	Sayre, T. D.	Wiley, E. E.
Redon, L. H., B.A.	Shearer, C.	Williams, W.
Richards, B. A.	Shearer, R. L.	Wilson, J. J.
Robb, G. W. A.	Simpson, E. G. W., B.A.	Winter, D. E.
Roberts, J.	Simpson, S.	Wood, D. F.
Robertson, C. G.	Snyder, A. E. W.	Wyman, H. B., B.A.

The following students, 88 in number, have passed the examinations in all the subjects of the First Year, viz. : Anatomy, Chemistry and Physics, Physiology, Histology, Biology and Practical Chemistry :

Ames, A. C.	Fuller, H. T.	Moore, J. C., D.V.S.
Anton, D. L.	Gardner, W. A., B.A.	Morrison, J. F.
Bayfield, T. F.	Giles, G. N.	Morse, W. R., B.A.
Beatty, H. W.	Green, F. W.	Mothersill, G. S.
Bishop, L. C.	Halliday, J. L.	Netten, P. E.
Blair, H. G. F.	Harley, R. O.	Niven, K. S.
Blakeman, F. W.	Harris, L. C.	Paterson, R. C., B.A.
Boyd, R. M.	Henry, C. M.	Peters, O. R.
Byers, R. J.	Hopkins, C. W.	Pickard, L. N.
Campbell, J. A. E., B.A.	Irwin, F.	Pratt, C. M.
Cantlie, T. P. L.	Johnson, J. A., B.A.	Ritchie, C. F.
Carnochan, W. L. C.	Jones, N. C.	Robertson, J. J.
Christie, J. F.	Lawlor, F. E.	Russell, E. M., B.A.
Codrington, R. F.	Learmonth, G. E.	Ryan, W. T., B.A.
Colby, J. C., B.A.	Leney, J. M., B.A.	Shaw, D. LeB.
Coleman, C. E.	Macdonald, A. A., B.A.	Shearer, R.
Crang, F. W.	Mackinnon, G. E. L.	Simpson, J. C.
Cullen, W. H.	Maclaren, A. H., B.A.	Smith, T. W.
Dixon, J. D.	MacNaughton, J. A.	Stockwell, H. K.
Dorion, W. A.	McGibbon, D.	Stowell, F. E.
Douglas, F. C.	McGrath, R. H.	Thomas, J. W., B.A.
Dowson, C. K.	McKee, W. E.	Taylor, D. A.
Doyle, A. J., B.A.	McNeill, J. F.	Tolmie, J. A.
Duncan, J. W.	McNeill, J. W.	Townsley, R. H.
Eastman, E. B.	Manchester, J. W.	Van Wart, R. M., B.A.
Evans, S.	Mason, P. C.	Walker, H.
Fearn, C. J.	Mason, L. D., B.A.	Wiggin, W. I.
Ferguson, W. H.	Menzies, J. E.	Williams, F. T.
Folkins, H. G.	Moffatt, G.	Williams, R. G.
Ford, W. S.		



LAWSON TAIT, F.R.C.S. Eng. and Edin.

Obituary

LAWSON TAIT, F.R.C.S., ENG. AND EDIN.

By the death of Mr. Tait at the early age of 54, a great name in surgery has passed away. Born in Edinburgh, where he received his ordinary and professional education, he, however, did not take his degree at the university, but qualified at the Royal College of Physicians and Surgeons of England. He some years later acquired the Fellowship of the Royal College of Surgeons of England. He was a pupil and later became an assistant to Sir James Simpson, for whom he had a great admiration. Mr. Tait's earliest opportunities showed him to be a man of marked originality, ability and force of character in all he said, wrote or did. His leanings to surgery were early apparent, and especially to the surgery of the diseases peculiar to women, to which, however, he by no means exclusively confined himself. He did his first ovariectomy at 23, and of his first fifty cases nineteen died, and we are told by Mr. Christopher Martin, his pupil, assistant, partner and hospital colleague, that at this time he was operating under the carbolic acid spray and full antiseptic precautions. This was in 1878, when full antiseptic precautions were not what they are to-day. He subsequently reported 139 successive ovariectomies without a death, and his ultimate vast experience was evidenced in a paper entitled "A General Summary of Conclusions from Four Thousand Cases of Abdominal Section," published in 1894.

Mr. Tait's greatest merits as a surgeon were boldness and originality, fertility of resource and almost incredible rapidity in operating. To whomsoever may belong the credit of absolute priority, to Tait, undoubtedly, belongs the merit of popularizing such procedures as the operation for ectopic gestation, for the removal of gall stones from the gall bladder and liver, the removal of diseased ovaries and Fallopian tubes and the removal of the uterine appendages in uterine myoma, besides numerous minor procedures in gynæcology.

To fully understand the immense force of Mr. Tait's personality one must have known him intimately and seen him at work—one of the greatest and most memorable privileges of the writer of this notice by whom it was enjoyed in 1886. Mr. Tait was in the zenith of his fame and reputation in the eighties, and then it was the ambition of every aspirant to the practice of gynæcology to make a pilgrimage to Birmingham, where for many years Mr. Tait lived and worked. So num-

erous were his visitors that he ultimately found it necessary to restrict them to a very great extent.

Doubtless, many of our readers will remember Mr. Tait's visit to America on the occasion of the Montreal meeting of the British Science Association in 1884. The annual meeting of the Canadian Medical Association had been arranged for that date. Before this meeting Mr. Tait delivered an address on abdominal surgery, which excited much attention and was published in this *Journal*. Numerous invitations poured in on Mr. Tait to visit other Canadian and American cities and to operate. A number of these he was able to accept.

Mr. Tait was a genius and he was not free from the faults common to genius. Under a brusque exterior and with unconventional methods and manners, he had a large and kindly heart, but he was rarely other than engaged in controversies; he was a stout fighter and a hard hitter and consequently made many enemies. His letters were so characteristic that, once acquainted with their style, no signature was necessary to recognize them. Such a letter appeared in the number of the *British Medical Journal* immediately preceding that which announced his death.

Mr. Tait's energy and activity were too great to be confined to the work of his profession—he took a very active part in the municipal affairs of Birmingham and for ten years was a member of the City Council. In 1886 he was the unsuccessful candidate for the parliamentary representation of the Bordesley Division of Birmingham in the Radical and Home Rule interest. The writer, who was in Birmingham shortly after the contest, well remembers the regret of his friends at the issue of the contest. In the words of Mr. Labouchère, of London *Truth*, "he would have been a most valuable addition to the House of Commons."

Mr. Tait died suddenly of uræmia on the 13th of June, 1899, at Llandudno, in Wales, but it was early in 1893 that he first began to suffer from symptoms of chronic nephritis.

SIR WILLIAM ROBERTS.

There are many physicians who have made for themselves a greater name and popular reputation than Sir William Roberts, but there have been few brighter spirits, few who by their life work have done so much to advance the credit of English medical research, very few in whom race, training and natural ability combined to produce so interesting and refreshing a personality.

For, in the first place, he was of Welsh Wales, and of the most intensely Welsh part of Wales, to wit, of Anglesea, where Cymric is still the universal medium of communication between all classes, so much

so that the unfortunate "Sassenach," if he strays beyond Holyhead or Bangor, finds himself as much an Angle at sea as is the island itself. And throughout life Roberts bore himself as a Welshman of the best type. He was one of the small-built, black-haired Welshmen, alert and genial, with that accent and intonation of the English language that bewrayeth, and that simple humour which, as Shakespeare taught us by the mouth of Fluellen, is very far from denoting the simpleton. Not that Sir William would compel his antagonist to eat the leek : indeed, in this he departed from type. He was neither fiery nor litigious ; on the contrary, was of so gentle a nature as to be peculiarly averse to picking a quarrel or hurting the feelings of any living man, present or absent. Yet, if one, listening to his ordinary social talk, were inclined to judge that talk childish in its playfulness, he would be brought up sharp against some shrewd sally or rejoinder, so full of knowledge and so rich in thought that of a sudden one's estimation of the man underwent an entire change.

His learning, further, was somewhat distinctive. The ordinary public school of his boyhood was strictly orthodox and under the sway of the Church of England. Thus, as the son of well-to-do Welsh, and therefore Calvinistic, parents, he was sent to Mill Hill in Hertfordshire, then recently established by the Congregationalists upon an undenominational basis, and thence, for his medical studies, he passed naturally to University College, which yet more fully represented the attempt to remove education from the domination of any one sect. The very liberalism which led to the foundation of these two institutions led, especially in the early years of their existence, to a renascent keenness in the spirit and methods of their teaching staffs, and of this young Roberts reaped the full benefit. It is not a little instructive to note how many of the leading English physicians and surgeons of the close of this century have been old University College men, pupils of Sharpey, Quain, Walshe, Jenner, and Erichsen.

That he was a brilliant student is shown by the fact that in his undergraduate career he obtained the highest honours in Chemistry and Physiology for the B.A. degree of the University of London, the medal and exhibition in Chemistry for the first M.B. examination, and later, the gold medals in Physiology, Comparative Anatomy, and Medicine, of that university. Gaining his M.B. degree in 1853, he studied for some months in France and Germany—a somewhat unusual course for an English physician of those days. As a sequel was his intimate and unusual acquaintance with continental medical literature.

This very course, excellent as it was and explaining as it does his later successes, told on him both favorably and unfavorably. Just

as his training was distinctive, so his modes of work and thought throughout life remained independent. It may be that the provincial physician, like the colonial, labours under singular difficulties in making his work known and appreciated at headquarters and thence reflexly throughout the length and breadth of the empire, but something is due to Roberts' voluntary independence and isolation that his sound and valuable researches did not more rapidly become integral parts of current medical knowledge. During the greater part of his career, he cared little about making himself and his results known among his confrères at society meetings in London and elsewhere, or in the medical press. So, also, though for close on thirty years he was an active teacher, I do not think that the ordinary student appealed to him or gained the fullest benefit from his lectures and clinics, which, rather, were to be appreciated—and were appreciated—by the best men of each year. As a consultant, however, he had always that to say or to advise which was apt and valuable, and so expressed as to linger long in the memory.

In 1854, he was appointed house-surgeon to the Manchester Royal Infirmary, and so remarkable an impression did he immediately make, that the following year, when he was but twenty-five years old, he, a comparative stranger, was elected without opposition a full physician on the staff—a circumstance almost unique in the history of so large an English hospital. That same year he was appointed lecturer on anatomy and physiology in the School of Medicine, and from 1855 to 1889 he remained in intimate connection with these two institutions, becoming eventually senior physician to the one and professor of medicine in the other. Other appointments he did not seek; nor, indeed, did he actively seek private practice: it came to him. His first ten years in Manchester were spent very largely in the hospital wards and in his laboratory, but the results of his long period of strenuous study and research led to his being surely recognized in the middle of the "sixties" as the leading physician in the North of England, a position which he retained for twenty years or more, Clifford Allbutt, in Leeds, being his only serious rival. But even when most fully engaged as a consultant, with much of his time spent in the train rushing here and there within a radius of one hundred miles of Manchester, his chiefest interest and his main source of relaxation lay in his laboratory.

In the middle of the century, laboratories of physiological and pathological chemistry were unknown in connection with British medical schools, and, the trend of Roberts' investigations being chemical, he was forced to establish his laboratory at his own house, nor when, later, the ample laboratory accommodation at the Owens College was at his disposal, would he take advantage of it. Thus his long series of studies upon the digestive ferments and artificial foods, upon uric

acid and the urates, gravel and gout, were made in his own house during the course of a singularly active professional life; and, what is more, each laborious step in the preparation, weighing, and measuring of his material, was performed by himself, unaided by any assistant. "Far and few" are the men possessing the energy and tenacity to establish such a record. There is, it is true, a rising young New York physician, known to many in Montreal, who, upon the topmost storey of one of the Madison Avenue palaces, keeps and feeds and ultimately analyses a select herd of swine. Sir William Roberts' little den was of an earlier age and could not compare with the New York installation: if I mistake not the largest animals ever kept there were oysters.* That New York physician promises, by the present importance of his researches, to be a second Sir William Roberts, nay, it may be a greater than he, but, granting this case, it still remains wonderfully rare to find the busy and popular consultant making time to prosecute, single-handed, subtle researches in organic chemistry.

As for the published work of Sir William Roberts, a few words must here be said. That by which he made his mark was his well-known *Practical Treatise upon Urinary and Renal Diseases*, of which at least four editions have been published since 1865. This was, and, I think, remains, the most original and most thorough discussion of the subject in our language. To Roberts we owe the simple and curiously accurate yeast fermentation test for diabetic urine, as well as the basis of our knowledge of the action of solvents upon urinary calculi, together with observations upon the ultimate relationship of uric acid, the urates, and the quadriurates, or, more exactly, between the forms in which uric acid presents itself in the blood, the urine and the tissues,* observations as valuable as they are minute and painstaking, which are of elementary importance for the comprehension of both gravel and gout. This most valuable series of studies is little recognized by continental workers—a state of affairs for which, as already hinted, Roberts' isolation as a worker must, I think, be held in part responsible. To him also we owe the knowledge that the suppression of urine, as seen in calculous anuria, induces symptoms distinct from the uræmia of Bright's disease, knowledge based upon a series of observations and amply confirmed during the last few months only by the studies of Herter and Sydney Martin. As the leading authority upon renal disease he contributed important articles to the successive systems of Reynolds, Quain and Allbutt.

* This, in the course of his studies upon foodstuffs, in which he proved that oysters—live oysters—are the most digestible of food in that, their liver or gastric ferments continuing active in the human stomach, they accommodately digest themselves. Thus, gastronomically speaking, it is a crime to cook the oyster.

† Croonian Lectures, 1892.

Next to the urinary system and the disturbances therewith connected, the digestive system claimed his attention. He was a pioneer in the study of the digestive ferments from the point of view of the physician and of the value of artificially digested foods; he called attention more especially to tryptic fermentation and the activity of the pancreatic secretion.* In 1891, he collected and placed in consecutive form his long series of papers dealing with *Digestion and Diet*.

Elected a Fellow of the Royal Society in 1877, in 1885 he (and his work) obtained the well-merited recognition of Knighthood, and in 1889, wishing to escape the burden of his large consulting practice, he settled in London that he might devote himself in a more leisurely and thorough manner to research. "Single-minded and free from all jealousies and small ambitions," his geniality and quaint humour soon made him a great addition to London medical society. Until they knew him, it was with bated breath that the staid metropolitan physicians saw him chaff the President of the Royal College of Physicians or other head of the profession, then, finding that no evil was meant and none ensued, they went on their way refreshed. One nearer to us in Montreal, himself also of the small-built, dark-haired, Celtic type, is surely now creating in London a similar impression and great popularity.

Thus busied with new interests in London, the continuance of old investigations in his laboratory, and the development (during his yearly holiday) of his country seat in Wales, Sir William Roberts' life during its last ten years would have been ideal had it not been saddened by the sudden death of an only son, then an undergraduate at Oxford, a blow from which he never wholly recovered. Very wisely, he accepted at this period a position as member of the Opium Commission, for in India he found that total change of scene and of surroundings that were then all important. In the autumn of 1898 symptoms of serious ill-health manifested themselves, and, progressing, led to his death on April 16th at the age of sixty-nine. He was buried at Llanymawddwy, Merionethshire.

J. G. Adami.

* Lumleian Lectures, 1880.

CANADIAN ADDENDUM TO THE BRITISH PHARMACOPEIA.

On the invitation of Dr. Atfield, of London, England, the Montreal Medico-Chirurgical Society, has taken the initiative, and with the co-operation of the following, has drafted the attached lists : Dr. A. D. Blackader, Professor of Pharmacology, McGill University ; Dr. Robert Wilson, Professor of Pharmacology, Bishop's College ; Dr. H. Hervieux, Professor of Pharmacology, Laval University ; Prof. J. E. Morrison, Past President, American Pharm. Association ; Mr. R. W. Williams, President Quebec Pharmaceutical Association ; Mr. W. H. Chapman, President Montreal College of Pharmacy.

Using this as a foundation, the Medical Colleges, the Colleges of Physicians and Surgeons, and the Pharmaceutical Associations and Colleges throughout the Dominion are requested to contribute additions and amendments.

A very short notice was given, and the completed addendum must be in London within a short time.

ELIXIR SIMPLEX.

(*Simple Elixir.*)

Tincture of Orange.....	2 ozs.	100 ccs.
Tincture of Lemon.....	$\frac{1}{2}$ "	25 "
Orange Flower Water.....	2 "	100 "
Alcohol (90 per cent.).....	3 "	150 "
Syrup.....	8 "	400 "
Kaolin }	Of each a sufficient quantity.	
Water }		

Mix the Tincture of Orange, Tincture of Lemon, Orange Flower Water, Alcohol, Syrup and four fluid ounces (or two hundred cubic centimetres) of water with two ounces of Kaolin ; set aside for twenty-four hours ; filter ; wash the filter with sufficient water to make twenty fluid ounces (or one thousand cubic centimetres) of Simple Elixir.

NOTE—In response to a demand for simple diluent ; not too sweet or heavy.

EMULSUM OLEI MORRHUE.

(*Emulsion of Cod Liver Oil.*)

Cod Liver Oil.	8 ozs.	500 ccs.
Gum Acacia (in powder)...	2 "	125 grammes.
Syrup	1 "	62½ ccs.
Oil of Bitter Almonds	2 m.	5 m.
Water	a sufficient quantity.	

Triturate the Cod Liver Oil and Gum Acacia together : add five ounces (or three hundred and thirteen cubic centimetres) of water, and stir briskly ; when the emulsion is formed add the Oil of Bitter Almonds, the syrup and sufficient water to make sixteen fluid ounces (or one thousand cubic centimetres).

NOTE—For the administration of Cod Liver Oil, or as a basis for combination with the hyphosphites, creasote, quinine, etc.

EXTRACTUM APOCYNII LIQUIDUM.

(Liquid Extract of Apocynum.)

Apocynum (in No. 60 powder).	20 ozs.	1000 grammes.
Glycerine	2 "	100 ccs.
Alcohol (90 per cent.)	a sufficient quantity.	

Moisten the powdered Apocynum with about eight ounces (or four hundred cubic centimetres) of the alcohol ; pack the moistened powder in a percolator, and add sufficient alcohol to saturate it thoroughly ; when the liquid begins to drop, close the lower orifice of the percolator ; set aside for forty-eight hours ; then allow percolation to proceed gradually, adding alcohol until the Apocynum is exhausted ; reserve the first seventeen fluid ounces (or eight hundred and fifty cubic centimetres) of the percolate ; remove the alcohol from the remainder by distillation ; evaporate the residue to a soft extract ; dissolve this in the reserved portion ; add sufficient alcohol to produce twenty fluid ounces (or one thousand cubic centimetres) of the Liquid Extract.

Dose—2 to 5 minims.

NOTE—Valuable diuretic and cardiac stimulant. Occasionally used. Of less importance.

EXTRACTUM BUCHU LIQUIDUM.

(Liquid Extract of Buchu.)

Buchu Leaves (in No. 40 Powder)	20 ozs.	1000 grammes.
Alcohol (90 per cent)	a sufficient quantity.	

Moisten the powdered Buchu Leaves with about eight ounces (or four hundred cubic centimetres) of the alcohol ; pack the moistened powder in a percolator, and add sufficient alcohol to saturate it thoroughly ; when the liquid begins to drop, close the lower orifices of the percolator ; set aside for forty-eight hours ; then allow percolation to proceed, gradually adding alcohol until the Buchu Leaves are exhausted ; reserve the first seventeen fluid ounces (or eight hundred and fifty cubic centimetres) of the percolate ; remove the alcohol from the remainder by distillation ; evaporate the residue to a soft extract ; dissolve this in the reserved portion ; add sufficient alcohol to produce twenty fluid ounces (or one thousand cubic centimetres) of the Liquid Extract.

NOTE—The tincture is hardly ever used as it contains too much alcohol.

EXTRACTUM GRINDELIA LIQUIDUM.

(Liquid Extract of Grindelia.)

Grindelia (in No. 40 powder)...	20 ozs.	1000 grammes.
Alcohol (90 per cent)	a sufficient quantity.	

Prepared the same as Buchu.

EXTRACTUM HYSOCYAMI LIQUIDUM.

(Liquid Extract of Henbane.)

Henbane Leaves (in No. 40 powder)	20 ozs.	1000 grammes.
Alcohol (60 per cent)	a sufficient quantity.	

Same as Buchu.

NOTE—More reliable than the succus as obtained in Canada, and contains less alcohol than the tincture.

EXTRACTUM PRUNI VIRGINIANÆ LIQUIDUM.

(Liquid Extract of Wild Cherry.)

Wild Cherry Bark (in No. 40 powder).	20 ozs.	1000 grammes.
Glycerine	2 "	100 ccs.
Alcohol (45 per cent.).....	A sufficient quantity.	

Mix the Glycerine with six ounces (or three hundred cubic centimetres) of the alcohol ; moisten the Wild Cherry Bark with the mixture, and allow to macerate in a tightly closed vessel for forty-eight hours : pack the moistened powder in a percolator and sufficient menstruum to saturate it thoroughly ; when the liquid begins to drop, close the lower orifice of the percolator ; set aside for twenty-four hours ; then allow percolation to proceed, gradually adding menstruum until the Wild Cherry Bark is exhausted ; reserve the first eighteen ounces (or nine hundred cubic centimetres) of the percolate ; remove the alcohol from the remainder by distillation ; evaporate the residue to a soft extract ; dissolve this in the reserved portion ; add sufficient menstruum to produce twenty fluid ounces (or one thousand cubic centimetres) of the Liquid Extract.

Dose.—30 to 60 minims.

NOTE.—Much more serviceable than the tincture.

EXTRACTUM TRITICI LIQUIDUM.

(Liquid Extract of Couch Grass.)

Couch Grass (cut small).	20 ozs.	1000 grammes.
Boiling Water.....	A sufficient quantity.	
Alcohol (90 per cent.)....	5 ozs.	250 ccs.

Digest the Couch Grass with one hundred ounces (or five litres) of boiling water for six hours ; strain ; repeat the operation twice ; mix the infusions and evaporate to fifteen ounces (or eight hundred cubic centimetres) : add the alcohol ; let stand twenty-four hours and filter.

Dose.—1 to 2 drachms.

NOTE.—Very often used. All the principles are in solution.

EXTRACTUM GRINDELIA LIQUIDUM.

(Liquid Extract of Grindelia.)

Grindelia in No. 40 powder,	20 ozs.	1000 grammes.
Sodium Carbonate.....	2 "	100 "
Water.....	10 "	500 "
Alcohol (80 per cent.).....	A sufficient quantity.	

Moisten the Grindelia with eight ounces (or four hundred cubic centimetres) ; macerate in a closed vessel for twenty-four hours ; pack the moistened powder in a percolator, and add sufficient menstruum to saturate it thoroughly ; when the liquid begins to drop, close the lower orifice of the percolator : set aside for twenty-four hours ; then allow percolation to proceed gradually, adding menstruum till the Grindelia is exhausted. Recover the alcohol by distillation, and dissolve the residue in the water containing the Sodium Bicarbonate, and after effervescence ceases add sufficient alcohol to make twenty ounces (or one thousand cubic centimetres) of Liquid Extract.

Dose.—10 to 20 minims.

NOTE.—Frequently used. Made according to this formula it is missible with water without precipitation of resins. All the active principles are present.

EXTRACT SENEGÆ LIQUIDUM.

(*Liquid Extract of Senega.*)

Senega (in No. 40 powder).	20 ozs.	1000 grammes.
Solution of Soda.....	2 "	100 ccs.
Alcohol (70 per cent.).....	A sufficient quantity.	

Moisten the powdered Senega with the Solution of Soda and six ounces of alcohol ; pack the moistened powder in a percolator, etc., the same as for Buchu.

Dose.—5 to 20 minims.

NOTE.—Is in great demand. Requires to be thus made with a non-volatile alkali to prevent gelatinous change.

EXTRACTUM SANGUINARIÆ LIQUIDUM.

(*Liquid Extract of Blood Root.*)

Blood Root in No. 60 powder...	20 ozs.	1000 grammes.
Glycerine	1 "	50 ccs.
Acid Acetic	$\frac{1}{2}$ "	25 "
Alcohol (80 per cent.).....	A sufficient quantity.	

Mix the Glycerine and Acetic Acid with eight ounces (or four hundred cubic centimetres) of alcohol. Moisten the Blood Root with the mixture ; pack the moistened powder in a percolator ; and proceed as with Buchu.

Dose.—3 to 10 minims.

NOTE.—Less important.

EXTRACTUM VIBURNI OPULI LIQUIDUM.

(*Liquid Extract of Cramp Bark.*)

Cramp Bark (in No. 60 Powder)..	20 ozs.	1000 grammes.
Alcohol (70 per cent.).....	A sufficient quantity.	

Same as Buchu.

Dose.—1 to 2 drachms.

NOTE.—Less important.

EXTRACTUM VIBURNI PRUNIFOLI LIQUIDUM.

(*Liquid Extract of Black Haw.*)

Black Haw (in No. 60 powder).	20 ozs.	1000 grammes.
Alcohol (70 per cent.).....	A sufficient quantity.	

Same as Buchu.

Dose.—1 to 2 drachms.

NOTE.—Valuable and much in use.

LIQUOR THYMOLIS COMPOSITUM.

(*Compound Solution of Thymol*)

Benzoic Acid.....	10 grammes.
Boric Acid	20 "
Borax	10 "
Thymol.....	2 "
Eucalyptol	10 drops.
Oil of Wintergreen.....	10 "
Oil of Peppermint.....	6 "
Glycerine	100 ccs.
Alcohol (90 per cent.).....	300 "
Water.....	A sufficient quantity.

Dissolve the Thymol, Oil of Wintergreen and Oil of Peppermint in the Alcohol; dissolve the Benzoic Acid, Borne Acid and Borax in twelve ounces (or six hundred cubic centimetres) of water; add the Glycerine; mix the two solutions; set aside for twenty four hours; filter through Kaolin, and add sufficient water to make twenty fluid ounces (or one thousand cubic centimetres).

NOTE.—Similar proprietary preparations are in constant demand.

OLEUM GAULTHERIA.

(*Oil of Wintergreen.*)

The oil distilled from the leaves of *Gaultheria procumbens*.

CHARACTERS AND TESTS.—Colorless or slightly yellowish tint. Specific gravity 1.180 to 1.187. It should rotate the plane of a ray of polarized light not less than 0.25° to the left in a tube 100 millimetres long (Powers & Kleber).

NOTE.—A favorite aromatic oil in Canada.

SYRUPUS ACIDI HYDRIODICI (2 p.c.)

(*Syrup of Acid Hydriodic.*)

Potassium Iodide.	236.25 grains.	27 grammes.
Tartaric Acid.....	223 "	25.5 "
Calcium Hypophosphite ..	17½ "	2 "
Water.....	525 minims.	60 ccs.
Alcohol (45 per cent.)....	440 "	50 "
Syrup to make.....		1000 ccs.

Dissolve the Potassium Iodide and Calcium Hypophosphite and the Tartaric Acid in 440 minims (or fifty cubic centimetres) of alcohol; mix the solutions; shake well and set aside in ice water for half an hour; then filter through a small filter, washing the filter with Alcohol (45 per cent.) till the filtrate amounts to two ounces (or one hundred cubic centimetres). Mix this solution with sufficient syrup to produce twenty fluid ounces (or one thousand cubic centimetres.)

NOTE.—Official in U. S. P. (1 per cent.), but 2 per cent. is frequently demanded, and therefore meets all requirements.

SYRUPUS FERRI PHOSPHATIS COMPOSITUS.

(*Compound Syrup of Ferrous Phosphate.*)

Iron Wire.....	37½ grains.	4.3 grammes.
Precipitated Calcium Carbonate..	120 "	13.7 "
Potassium Acid Carbonate....	9 "	1 "
Sodium Phosphate.	9 "	1 "
Cochineal.....	30 "	3.5 "
Sugar.....	14 ounces.	700 "
Water.....	A sufficient quantity.	

Dissolve the Iron Wire in one fluid ounce (or fifty cubic centimetres) of Phosphoric Acid and half an ounce (or twenty-five cubic centimetres) of water in a flask, heating gently till dissolved. Dissolve the Precipitated Calcium Carbonate, Potassium Carbonate and Sodium Phosphate in half an ounce (or twenty-five cubic centimetres) of Concentrated Phosphoric Acid and two ounces (or one hundred cubic centimetres) of water. Mix the solutions, filter and set aside. Boil the cochineal and six fluid ounces

(or three hundred cubic centimetres) of water for fifteen minutes ; cool, filter and wash the filter with sufficient water to make seven ounces (or three hundred and fifty cubic centimetres). In this dissolve the sugar with the aid of heat, and strain. When cold, add the solution of phosphates and sufficient water to measure twenty fluid ounces (or one thousand cubic centimetres).

NOTE.—Large amounts used.

SYRUPUS HYPOPHOSPHITUM COMPOSITUS.

(*Compound Syrup of the Hypophosphites.*)

Calcium Hypophosphite....	80 grains.	12 grammes.
Potassium Hypophosphite..	40 “	6 “
Manganese Hypophosphite..	40 “	6 “
Iron Hypophosphite.....	40 “	6 “
Potassium Citrate.....	30 “	4.5 “
Strychnine Hydrochloride ..	2 “	0.3 “
Quinine Hydrochloride	8 “	1.2 “
Sugar	14 ounces.	700 “
Water.....	A sufficient quantity.	

SYRUPUS SENEGÆ.

(*Syrup of Senega.*)

Liquid Extract of Senega ...	4 ounces.	200 ccs.
Sugar	14 “	700 grammes.
Water.....	A sufficient quantity.	

Mix the Liquid Extract of Senega with ten ounces (or five hundred and fifty cubic centimetres) of water ; filter through Kaolin, washing the filter with distilled water ; dissolve the sugar in the filtrate ; strain and add water to make twenty fluid ounces (or one thousand cubic centimetres) of the Syrup.

Dose.— $\frac{1}{2}$ to 1 fluid drachm.

NOTE.—Preferred to tincture.

SYRUPUS IPECACUANHÆ.

(*Syrup of Ipecacuanha.*)

Liquid Extract of Ipecacuanha.	1 fld. oz.	50 ccs.
Acetic Acid.....	96 minims,	10 “
Glycerine	2 ounces.	100 “
Sugar.....	14 “	700 grammes.
Water	A sufficient quantity.	

Mix the Liquid Extract of Ipecacuanha, Acetic Acid and ten ounces (or five hundred cubic centimetres) of water ; filter through Kaolin into a vessel containing the Glycerine ; add the sugar and dissolve without the aid of heat ; strain and add water to make twenty fluid ounces (or one thousand cubic centimetres) of the Syrup.

Dose.—1 to 2 drachms.

NOTE.—Strongly recommended.

TINCTURA ARNICÆ FLORES.

(*Tincture of Arnica Flowers.*)

Arnica Flowers, in No. 20 powder....	2 ozs.	100 grammes.
Alcohol (45 per cent.).....	A sufficient quantity.	

Moisten the powder with four fluid ounces (or two hundred cubic centi-

metres) of the alcohol, and complete the percolation process. The resulting tincture should measure one pint (or one thousand cubic centimetres).

Dose.— $\frac{1}{2}$ to 1 fluid drachm.

NOTE.—This tincture is the preparation exclusively used in this country.

TINCTURA JALAPÆ COMPOSITA.

(*Compound Tincture of Jalap.*)

Jalap. No. 40 powder.....	1 oz., 262 grains.	80 grammes.
Scammony, ".....	175 grains	20 "
Turbeth, ".....	88 "	10 "
Alcohol (60 per cent.).....	A sufficient quantity.	

Moisten the powders with two fluid ounces (or one hundred cubic centimetres) of the alcohol, and complete the percolation process. The resulting tincture should measure one pint (or one thousand cubic centimetres).

NOTE.—Ordinary tincture is never used. This preparation is a favorite among French physicians.

TINCTURA OPII DEODORATA.

(*Deodorized Tincture of Opium.*)

Opium.....	3 ounces.	150 grammes.
Alcohol (90 per cent.).....	} Of each a sufficient quantity.	
Distilled Water.....		

Rub the opium to a paste with ten fluid ounces (or five hundred cubic centimetres) of distilled water previously heated to at least 200° F. (93.3° C.); set aside for six hours. Add another five ounces (or two hundred and fifty cubic centimetres) of water; mix thoroughly; set aside in a covered vessel for twenty-four hours; strain; press; mix the liquids. Let the infusion stand for twelve hours in a vessel surrounded by ice; filter through a pleated filter containing a piece of ice. To the filtrate add five ounces (or two hundred and fifty cubic centimetres) of the alcohol. Set aside for twenty-four hours; filter. Determine the percentage of morphine in the liquid by the process given under Tincture of Opium; and to the filtered liquid add a sufficiency of a mixture of alcohol water so that the resulting tincture will contain not less than 0.70 grammes, nor more than 0.80 grammes, in one hundred cubic centimetres.

Dose.—5 to 15 minims for repeated administration.

For a single administration 20 to 30 minims.

NOTE.—Much needed.

TINCTURA SANGUINARIÆ.

(*Tincture of Sanguinaria.*)

Sanguinaria, in No. 40 powder...	2 ounces.	100 grammes.
Acetic Acid.....	192 minims.	20 ccs.
Glycerine.....	1 ounce.	50 "
Alcohol (80 per cent.).....	A sufficient quantity.	

Mix the acetic acid, glycerine and alcohol. Moisten the sanguinaria with two fluid ounces (or one hundred cubic centimetres) of the menstruum; and complete the percolation process. The resulting tincture should measure one pint (or one thousand cubic centimetres).

NOTE.—Less important.

FERRI HYPOPHOSPHIS.
(*Ferric Hypophosphite.*)



Ferric hypophosphite obtained by the interaction of calcium hypophosphite and ferric chloride.

Characters and Tests.—A grayish white powder; only slightly soluble in water; entirely soluble in solution of potassium citrate, forming a green solution. Should give no reaction for carbonates, phosphate.

NOTE.—Used in preparation of Syr. Hypophosphitum.

HYDRARGYRI IODIDUM FLAVUM.

(*Yellow Mercurous Iodide.*)

Hg. I.

Mercurous iodide obtained by interaction of mercurous nitrate and potassium iodide.

Characters and Tests.—A bright yellow amorphous powder; almost insoluble in water; entirely insoluble in alcohol and ether.

NOTE.—Prepared according to this formula it is stable, and is in demand.

SYRUPUS HYPOPHOSPHITUM.

(*Syrup of the Hypophosphites.*)

Calcium Hypophosphite.....	394 grains	45 gr ^{ss} mes
Sodium Hypophosphite.....	131 "	15 "
Potassium Hypophosphite.....	131 "	15 "
Tincture of Lemon.....	87 minims	10 ccs.
Sugar.....	14 ounces	700 grammes
Water to make.....	20 "	1000 ccs.

Dissolve the salts in ten fluid ounces (or four hundred cubic centimetres) of water; dissolve the sugar in the solution without the aid of heat; add the tincture of lemon, and finally enough water to make twenty fluid ounces (or one thousand cubic centimetres) of the syrup.

Dose.—1 to 2 drachms.

NOTE.—Less important.

FERRI PHOSPHAS SOLUBILIS.

(*Soluble Ferric Phosphate.*)

Made according to the process of the U. S. P.

RESINA LARICIS.

(*Red Spruce Gum.*)

A resinous exudation from the stem and branches of *Larix Americana*.

TINCTURA RESINA LARICIS.

(*Tincture of Red Spruce Gum.*)

Red Spruce Gum.....	2 ozs.	100 grammes.
Alcohol (90 per cent.).....	20 ozs.	1000 ccs.

Made by the maceration process as tincture of myrrh.

SYRUPUS FERRI IODIDI.

(*Syrup of Ferrous Iodide.*)

Iron in Wire.....	$\frac{1}{2}$ oz.	25 grammes
Iodine.....	726 grains	83 "
Refined Sugar.....	15 ounces	750 "
Distilled Water.....	A sufficient quantity.	

Process.—The same as British Pharmacopeia.

NOTE.—Recommended as containing less sugar. It is not so liable to crystallize out in cold weather.

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THE PRESIDENT'S ADDRESS.

BY

IRVING H. CAMERON.

*Delivered at the Annual Meeting of the Canadian Medical Association,
Toronto, August 30th, 1899.*

THE OVERCROWDING AND THE DECADENCE OF SCHOLARSHIP IN
THE PROFESSION.

Gentlemen of the Canadian Medical Association :—

My first duty is the pleasant one of welcoming you all to the Queen City of the West, and to express the hope that your sojourn here may prove at once pleasant and profitable.

My next duty is to express to you my full appreciation of the goodwill and lenient judgment which prompted you to place me in the position of undeserved eminence which, by your suffrage, I occupy to-day.

“Some men are born great, some achieve greatness and some have greatness thrust upon them.” In the position of the last named I stand at present quite unwillingly; and had it not happened that on the occasion of your last meeting I was absent in England I should have presumed to correct your judgment and have pointed out my lack of fitness for the post. Under the circumstances, therefore, it is not too much to ask of you to cast that mantle of charitable consideration with which one so naturally envelopes one's own mistakes, over my shortcomings and defects.

It is the fashion on occasions like the present to raise the paean of *Io, triumphe!* and to recount the gains and the achievements of the year or of the decade, but this is done on every hand much better than I could do it and if the less skilful hand be set to point out some defects the less occasion for complaint will the auditors possess.

If, indeed, my screed turn out to be a jeremiad the proneness of the Keltic mind to such indulgence must plead my excuse on atavistic

grounds ; and the increasing tendency of one's second quarter of a century in the practice of Physic to recognize much merit in the men and methods of the past will add its suit in my defence.

The burden of my lament to-day is the Overcrowding of our Ranks, and the Decadence of Scholarship in the Profession ; and I shall best requite your courtesy and confidence, in giving me this opportunity to inflict my views upon you, by the briefest possible presentation of my subject.

I should do this in any case, however, recognizing to the full the truth of the ancient adage, *Verbum sapientibus sat*.

The fact of overcrowding in the Profession is sufficiently obvious to enable me to dispense with a demonstration, and is as well known to all of you as to myself.

The same thing is equally true of the other professions which, like our own, are still by courtesy called *learned*.

The Church and the Bar suffer from the same plethora as ourselves, and in their case the remedy will perhaps be more difficult of application and equally drastic in action. Your courtesy will doubtless allow me, however, to cite one or two instances in unnecessary substantiation of the proposition. And I need go no further afield than the city in which we meet to look for an illustration.

It used to be considered that a population of 1,000 souls afforded a sufficient clientèle to keep one medical man in reasonable occupation and affluence. But what do we find here ? A city of 200,000 inhabitants and 400 physicians ! Under the circumstances, these are naturally not of "*Toronto's 400*." A census of other cities and of rural districts will reveal a like condition of affairs ; and some three years ago Sir Wm. Mitchell Banks, in his Presidential Address to the Lancashire and Cheshire Branch of the British Medical Association discoursed upon the same state of the Professions at home in England. This year in France, too, the same subject has been the theme of more than one discourse.

The overcrowded state of the profession being granted, then, what are the evils which flow therefrom.

I make no apology, for none is needed, for answering this question by a long quotation from Mitchell Banks.

Those of you who know the man, or who had the privilege of listening to him in Montreal two years ago, will welcome again the *ipsissima verba* of the master, while they will regretfully miss his inimitable delivery ; and those who have not the pleasure of his acquaintance will gladly gather some impression of the man from my selections, while I willingly confess my inability to say what I wish to say with anything like the same felicity.

" At many meetings held during the past year, I could not help being painfully struck with the often repeated mention of the very small fees which, in certain of its departments,—notably that of midwifery,—many members of our profession were forced to accept. It is not that there is anything dishonourable in accepting a small fee. Why, the very smallest fee honourably earned from and gratefully paid by the poorest workingman is a king's ransom, in moral value, compared with the great sums extorted by that prince of quacks, the fashionable London specialist. But what one could not help feeling was, that the physical labour, the mental fatigue, and the harassment and anxiety expended by many of our brethren upon their cases, were utterly disproportionate to the value of the fees supposed to remunerate them. Can it be that the mercantile price of medical skill is depreciating in money value? This is not possible. The article, if one may so term it, is of far better quality than ever it was as regards intrinsic worth. Is it the general bad times?

No doubt this accounts for a good deal, but the difficulty of making a living in medicine has been steadily getting greater in the large cities and in the manufacturing districts for the last twenty-five years. Are we, as a body, falling in the estimation of the public, who are ceasing to respect us and who think our skill no longer worth paying for? Quite the contrary. As an honourable profession Medicine never took so high a rank in all its history as it does to-day. What, then, is the cause of this bitter cry from many of the rank and file of our profession, that they can only make their bread by miserable fees, earned by intolerably hard work? Gentlemen, it requires no royal commission to find this out. The simple fact is that, with us as with many other businesses and trades, there are too many of us for it. That is the sum and substance of the whole thing.

Many circumstances have contributed to this overcrowding. In former days a man of good family and social rank, but whose fortune was not very great, while his children were numerous, could often find places for a son or two in the church or in the army, through the influence of powerful friends. But the days of interest are gone, and these avenues are closed now. As for the Bar, the number of the briefless seems ever on the increase, while legal proceedings are actually diminishing in number. In business the quiet old trading days are gone, and there is nothing but hurry and conflict and cheating and risk. So that the merchant sees in Medicine a comfortable sphere of life, where a living can usually be made by any sober and industrious man. Thus the great Medical Schools have been pouring out a deluge of young practitioners, which has overwhelmed the land. One remembers the story of Abernethy's celebrated address to an audience of new-fledged doctors, which began with, " Good heavens ! gentlemen, what is to become of you all ? " It is a good thing

for him that he did not live to see the present state of things. It is curious to note, moreover, how we doctors are unknowingly compelled to follow the stream of popular prejudice. At the present day the desire is for life in towns where there is activity and energy and rivalry and companionship. A quiet life in the country is not in accord with the temper of the times, and men fly to the haunts of men.

I confess that there is no profession which has such a good excuse for so doing as ours. To make the spark, steel must rub against steel ; in order to progress, brain must struggle against brain. But, as a result, the overcrowding of our towns has only become all the more marked. There used to be many quiet old villages in England, where the doctors succeeded each other from father to son for three and four generations, and where the inhabitants did not believe there could be any doctors' worth talking about except those who had supported their fathers' and mothers' heads as they lay a-dying, and who had brought *them* into the world. But those days are gone ; and our business is not to lament the past, but to do the best for the present.

Being then, face to face with the fact that there are so many doctors in our cities and manufacturing towns, that a man must live a life of incessant labour and turmoil even to exist, and that in many cases he cannot even do that, what is the disadvantage to the public in this ? For it is right to take note of them as well as of ourselves. I have heard it argued by business men that there cannot be any harm in this, seeing that competition has compelled men to exercise every mental gift they possess, so as to excel each other in manufacturing things at a cheap rate, by which means the public have been great gainers. This, I admit, is perfectly true, but, as it happens, there is an immeasurable gulf fixed between the capacity of the ordinary man or woman to judge of the value of articles of commerce, and their capacity to judge of the value of medical skill. Every man who has long taught students becomes sententious ; he invents proverbs. I have long ago invented one to the effect that in Religion and Medicine the public like being quacked ; they deliberately prefer it. Just look round the circle of your acquaintances. They understand a business bargain. You can't take them over in buying a house or a piece of land. They appreciate to a penny the wares of the greengrocer or the milliner. But you have only to take a bread pill and "bill" the intervening space from the pyramids of Egypt to the cañons of the Rocky Mountains with posters, which announce that it will cure every disease from chickenpox to cancer, and you will make a huge fortune, which you will no doubt bequeath to charities when you die, as a kind of *quid pro quo* for having robbed your fellow-men during a long lifetime. A man comes to consult you, whose ailment is clearly due to his manner of living. You give him honest advice about this, show

him how he must alter his habits, and tell him he doesn't require physic. He has no sooner gotten to your doorstep than he proclaims you a fool, and proceeds to dose himself with Elliman's Little Kidney Pills, or Beecham's Embracation, or Siegel's Gore Mixture. Both in his religion and in his medicine the average man doesn't want to hear common sense; he wants to have something that will cure his soul or his body at once, by some supernatural means; and if you can lie hardily enough to him, he will swallow any dogma or any pill you like to stuff down his throat,—and pay handsomely for it, too. I cannot be accused of exaggerating, when one considers the vast numbers of persons who have voluntarily paid for Harness' Electric Belts and Count Mattei's Cure for Cancer. But the result of all this to us, as a profession, is very serious, for it is a direct inducement to us to prey upon the credulity of our patients, and I do not believe there is another body of men to be found anywhere which makes such strenuous efforts to be honest as we do, in spite of very great temptations to the contrary. If any man among us chooses to cut himself clean adrift from the society of his honest brethren, and to set up as an out-and-out daring charlatan, he is at any rate sure of making plenty of money, if only he will take for his motto, "*L'audace, toujours l'audace.*" Let us pursue the argument a stage further. Let us suppose a condition where, owing to there being more men than there is work for them to do, a certain number see no prospect of earning a decent living before them. What are they to do? It is all very well for Monsieur Talleyrand to tell the poor devil who said that he had to live, that he saw no necessity for it. The poor devils insist on living in spite of Monsieur Talleyrand; and if they cannot live honestly, well, then, they will live the other way. Go down any big street in the north end of Liverpool, and before you have gone far you will come on a shabby-looking shop, which has evidently remained empty for a long time till occupied by the present tenants. The window is blackened, but its dullness is relieved by gold letters which inform you that this is a Dispensary: that Dr. Dosem, Physician, Surgeon and Accoucheur is in attendance from 9 a.m. to 9 p.m., that medicine and advice are given for the moderate sum of sixpence, or even threepence, and that vaccination is performed at a phenomenally low figure. If you come back in a month or two you will find that the Dispensary has been let to a greengrocer, but Dr. Dosem has transferred his large and lucrative practice to another shop in a back slum of Manchester. Many of you are medical officers to clubs, and have been waited upon by the representatives of these clubs to know what is the very lowest figure at which you will take them. In the course of a week you learn that a neighbouring practitioner, two streets off, has been entertaining these gentlemen to pipes and whisky-and-water in his best sittingroom, and that he has agreed to take them

at sixpence a head less than you had announced as your minimum. Others of you having gathered around you a comfortable practice, can remember how a practitioner from a neighbouring village planted in a house close to you one of those wretched Helots of medicine, known as unqualified assistants, to whom he acted as "cover," while his slave sweated for him in the pleasant task of undermining your practice by underselling you. Thank God! the Medical Council has pretty well succeeded in stamping out such proceedings, well stigmatised by them "infamous" from a professional point of view. And still there is a lower depth; for in every big city you will find qualified men sitting in shops of, and openly abetting, those pests of society, the dealers in mysterious remedies for venereal diseases, whose advertisements, with singular appropriateness, adorn the walls of the public urinals.

If you ask, gentlemen, how these miserable things can be done by educated gentlemen, the members of a liberal profession, I reply that these are not educated gentlemen. They are men who should never have been in the ranks of our profession at all. They are, I admit, sorely tempted. Mostly they have wives and children depending on them, and clamouring for bread. Practice does not seem to come their way, and still the butcher and the baker must be paid; and so they naturally say to themselves,—if we cannot live honestly, we must live as best we can. I am charitable enough to believe that this is the case in the majority of instances, but there are not a few men who have simply the instincts of small shop-keepers. Their point of view of practice is identical with the point of view of a small grocer or third-rate chemist as regards his "takings." They adopt, positively by choice, the mean and sordid part of their profession. One of these men frankly told me, some years ago, that he did not care a fig for his profession, nor for the respect of his professional brethren. He wanted to get hold of money, and money he would have, however he got it.

I need not dwell further upon this very painful side of professional life. You are all too well acquainted with it."

Another evil of this overcrowding to which, however, Mitchell Banks does not allude, is an undue growth of Specialists. Young men entering the Profession—oftentimes men of enterprise and ability,—finding the general-practice avenues to employment and emolument thronged by a jostling crowd, seek by-paths to the attainment of their goal and speedily blossom out into full-grown specialists whose opportunities of attracting attention (not to say advertisement) are so much greater, whose fees are so much larger, and whose lives are made up of so much less-laborious days and nights of uninterrupted ease and enjoyment. The temptation, indeed, is great!

But I would not be mis-understood as decrying a proper specialism in

practice. When cases of a certain kind accumulate in sufficient number to confer upon an individual special skill and experience in their management, it is highly proper for him to devote himself to their treatment, and much to the advantage of all concerned, for he will bring to bear upon his special work a mind well developed by general experience and well stored with the facts of General Pathology. The mutual inter-dependence of all parts of the Animal Economy renders it imperative, in my mind, that the Specialist should grow out of the General Practitioner, or else be prepared for his special work by long residence on all sides of a General Hospital (including the Pathological Department). Otherwise he may possess consummate technical skill but nine tenths of time, his knowledge will be as nothing to that of the family physician who adds to a liberal stock of general information an acquaintance with disease in general, and a knowledge of his patient, root and branch.

But the good old-fashioned practitioner is dying out and my jeremiad would be incomplete if it did not bemoan the passing of the family doctor, and, in the day of automobiles, that other noble and useful animal, the doctor's horse.

On the other branch of my subject—the Decadence of Scholarship in the Profession—I have but scant time to speak.

That the literary side of the preliminary preparation for a medical education is nowadays too much neglected and that a low level of scholarship obtains and is accepted, is abundantly evidenced by the characters of the answers given to examination questions, and by the questions themselves, by the applications and petitions of medical students to the various governing bodies, and by the formal announcements and kalendars of the Medical Colleges themselves.

A comparison of the literary style of the medical text-books of to-day with that of the past generation, enforces the same conclusion.

Now this defect of scholarship is associated with, and to my mind, too oft begets defect of manners; and the courtesy and old-time courtliness of professional intercourse is rapidly disappearing.

The pupil no longer greets his master with the outward evidences of profound respect, but commonly meets him on terms of equality. The practitioners of our art no longer manifest in their public intercourse and private conversation that deference which characterized the gentlemen of the old school. Nor is this decline of manners restricted to the lower walks of the profession—the student and the practitioner—but it has invaded with no less subtlety and certainty the higher ranks of the consultant. The time was when the consultant did not seek to glorify himself at the expense of the Family Doctor, and when the welfare of the patient was their united, single aim. Then, *after consultation*, the Family Doctor expressed to the patient and his friends the result of the

deliberations and the plan of campaign jointly proposed. Nothing was said of differences, for these had been talked over and effaced, and no statements or suggestions were offered tending to exaggerate the lay estimate of the importance of the wide experience and profound learning of the Consultant or so-called Specialist. *During* the consultation in the endeavour to arrive at a unanimous conclusion, sight was never lost of the deference due to the Family Physician who had a special knowledge of the patient and his heredity, widely cultivated powers of observation, and a mind well-practised in the weighing of evidence. In the case of palpable or established error on the part of the practitioner, the educated consultant, quickly responsive to the dictates of the instincts of a gentleman, remembered the adage so well expressed by Pope :—

“Men must be taught as though you taught them not,
And things unknown proposed as things forgot.”

In brief the golden rule was the rule of conduct in consultations.

In those good old days the crowning disgrace of latter day consultations was utterly impossible. A man who then proposed in consultation, as has been openly advocated in a journal published in St. Louis, Mo., in the interest of the most absurd and irrational of all so-called specialties, Abdominal Surgery and Gynæcology, and, as has been done, I am told by at least two practitioners in our midst, that an operation should be performed by the consultant and a commission be extracted from the patient for the benefit of the practitioner referring the patient, would undoubtedly have been arraigned before a competent tribunal on a charge of conduct infamous in a professional respect ; yet this line of conduct is now openly urged on the plea of equity and justice to the family physician. Truly the commercial spirit, the instinct of the tradesman has infected a once noble and honourable profession with a destructive, nay, a fatal virus.

Now I venture to group these two crying evils of our time—the overcrowding of the profession and its decadence in Scholarship—together, because I believe the remedy for both is one and the same. Hear again what Mitchell Banks says upon the subject.

After referring to the failure of attempts to suppress quackery and illicit practice by legal process owing to technical quibbles and the sympathy of juries stimulated by the cry of oppression, and the inability of the General Medical Council to put down all the rascals in the profession, even if they sat all year round, he urged upon the attention of his hearers the expensiveness of the process citing one case in which the attempt to secure legal conviction cost the profession £600 and accomplished nothing. He then directs his attention to the suggestion that the severity of the professional examinations should be increased, and on

this point he says :—“ I can confidently affirm (from my experience in the General Medical Council and in the College of Surgeons) that it is not possible at present to add to the burden of examinations which the medical student has to bear without doing more harm than good. . . .

You can go on, no doubt, adding subject to subject, and examination to examination, but by so doing you only drive the student into further and further cramming. His serious defect at present is that, owing to the eternal cramming to which he is compelled to have recourse in order to master his subjects, he loses all power of thinking or reasoning for himself. He is being reduced to a mere grinding machine, which has to be stoked up with scientific pabulum. . . .

“ Well then, you ask, what is my remedy ? My remedy consists simply in stiffening up the entrance examination. I hold that there ought to be a rough sieve applied at the very beginning and that all who cannot get through this sieve should be cast on one side. As things stand at present any man who gets through an entrance examination will ultimately get a qualification of some kind which will enable him to put “ Doctor ” on his door plate, with just as much effect as a graduate in honours of the London University. You cannot hinder him from this by any amount of scientific or professional examinations. He will rub through these bit by bit. Any teacher will tell you how futile it is to attempt to turn back a man who has once passed an entrance examination, if that man is determined to go on. Besides, it seems to me unfair to allow an inferior man to enter upon a course of professional studies for which he is obviously unfitted. He ought not to be allowed to get so far. He should be turned back at the very commencement, and not encouraged to throw away years on unavailing work. It has been said that if only those who have had a really good preliminary education are to be allowed to enter the profession, you may keep back many poor but struggling geniuses, who might afterward make great names for themselves. Well, there would be reason in this argument if we were in want of men to join our ranks, but when our object is to keep out applicants, the persons to be kept out are the badly educated, underbred ones. They will be far happier as decent tradesmen, in positions where their manners and their ways of thinking will not be out of place. When admitted among us they simply hold us down and the few heaven-born geniuses among them would never be missed.” To secure uniformity Mr. Banks thinks the entrance examination should be under the control or inspection of the General Medical Council.

And if we are to have a General Medical Council of education, examination and registration for the Dominion—a consummation devoutly to be wished, and which your deliberations and endeavours at this session may almost make an accomplished fact—which Dr. Roddick's

strenuous efforts and untiring zeal have brought so nearly to an accomplishment, an achievement upon which I now offer both you and him my warmest and most sincere congratulations—if such a body, I say, be now happily about to be constituted, then, following the suggestion offered by Sir Wm. Banks, this most important duty of regulating the standard of entrance might well be entrusted to it.

But it is upon the character and quality of this entrance examination that I feel most strongly, and the strength of my feelings forces me to the imprudence of trespassing further upon your patience.

Dr. MacNeill, of Stanleybridge, P.E.I., presented this matter most forcefully and skilfully to the Maritime Medical Association at its meeting last month, and I heartily commend his address to your perusal as a most powerful argument in support of my position. (Maritime Med. News, Aug., '99.)

I am not of those who think that a degree in science alone is the proper and essential precursor of entrance upon medical studies, but I hold strongly to my ancient faith in the *literae humaniores*—the basis of what was called in my younger days “the education of an English gentleman”—as the proper substratum and foundation work upon which to build the superstructure of a professional education. Such a course is particularly suited for the medical practitioner, doing away largely with the evils above complained of, exacting a higher degree of culture and refinement—thus diminishing the internal pressure of numbers, and by the establishment of a higher sense of professional character and conduct, effacing many of the crudities and barbarities which now obtain, for as Ovid long ago averred, “*Emollit mores nec sinit esse feros.*”

That nothing short of the highest and best preparation will do for the medical profession you, of course, will all readily admit, but it is a peculiar source of gratification, and encouragement of high ideals, to find a man of so much eminence, of such genuine refinement and of such a wide experience of men and manners as Lord Roseberry, affirming, as he did on last Prize Day at Epsom College (July 29th), the association of which with the profession is peculiarly close, that “the medical profession in its science contained perhaps the most supreme elements of manhood of all the professions” and in the development of this “manhood” the headmaster (the Rev. T. N. Hart-Smith) on the same occasion said:—“Their aim at Epsom College was to train the boys on sound principles so that they might have a good general education—and by sound principles he meant classics and mathematics—and to turn out, not necessarily scholars and prize winners, but boys of the right stamp who were able to set an example in whatever situation they might be placed.” Such boys are doubtless the fathers of the right stamp of men.

But not only for the vocation of medicine amongst scientific pursuits

is literary culture valued, for we find Sir J. Norman Lockyer in the address which he delivered a year ago at the Royal College of Science, on the History of Scientific Instruction, concluding thus :—"I have referred previously to the questions of secondary education and of a true London University, soon, let us hope, to be realized. Our college will be the first institution to gain from a proper system of secondary education, for the reason that scientific studies gain enormously by the results of literary culture without which we can neither learn so thoroughly, nor teach so effectively as one could wish."

Let me not be misunderstood, however. I have no desire to force all our students to become "Grammarians," to be able to "settle *hoti's* business, properly base *oun* or give us the doctrine of the enclitic *de*," but I would have them realize to the full the truth of the remark made by Dr. John Brown in the Post Preface to his "Horae Subsecivae" now forty years ago :—

"Latin and Greek are not dead—in one sense they are happily immortal, but the present age is doing its worst to kill them, *and much of their own best good and pleasure.*"

I feel no keener sense of gratitude to any man than I owe to the memory of the late Dr. Morden, of Brockville, who gave me my first copy of Dr. Brown's "Spare Hours" a few years after they were published and from which I learned the wisdom which that quoted sentence inculcates.

The preparation, then, which I would require all candidates in the Medical Faculty to have undergone in their own best interest as well as in that of the Profession, would be such a literary training as is involved in what we call in the University of Toronto "the general course," and which comprises, *inter alia*, the subjects of Latin and Greek, French and German, Astronomy and Physics, Biology and Geology, Philosophy, History and Political Economy. Having graduated in this course after three or four years of study, I would have them then proceed to the Faculty of Medicine and devote the first two or three years therein to those branches of science which are immediately ancillary to Medical Knowledge, viz. :—Biology (including Physiology), Human and Comparative Anatomy, Chemistry and Materia Medica ; and the final three years should be spent in the clinical laboratory, the hospital and the post-mortem room, on the walls of which should always be inscribed, as it was over the door of the Mortuary of the old Hotel Dieu in Paris :—"Hic locus est quo mors gaudet succurrere vitae."

Having completed such a course with diligence and honesty, the new born physician would enter upon his career of honourable usefulness with commingled modesty and confidence, and the evils which I have bemoaned at such length would cease in the land.

One other, and a painful duty remains to me before I close. It is to make mention of the diminution of our numbers by the inevitable emigration to "the great majority." Were the roll to be called to-day of those who were active in the Association's work when I joined the ranks five-and-twenty years ago, scarce a corporal's guard would answer to their names. Of the rest it would have to be recorded "*abiverunt ad plures*" or "*emigraverunt*."

And of the Corporal himself, then Secretary of the mess (Osler), it would have to be told that though happily still present in the spirit the absent flesh had sought "fresh woods and pastures new." How well for us if he could only have deferred it until "to-morrow" !

My coranach to-day is "but an echo of the moan for these" and the names I mention, with averted head and the hand thrice filled with dust, are H. H. Wright, of Toronto, Charles Robinson, of Brampton, original members of the Association ; and J. H. Mullin, of Hamilton, H. P. Wright, of Ottawa, and J. E. Graham, of Toronto, who were contemporaries with myself in 1874. Only three of these, Dr. Mullin, Dr. H. P. Wright and Dr. Graham took a continuously active part in the work of the Association, and the memory of their service demands a word of acknowledgment. Of these three Dr. Mullin alone had passed the meridian of life, and with him the shadows had scarcely begun perceptibly to lengthen until a year before his death. The last occasion on which I remember to have seen him in Toronto was at the meeting convened by Dr. Roddick to discuss the question of Interprovincial Registration. But then the shadow of the shadow that waits for men was creeping on apace.

Throughout his professional career of forty years Dr. Mullin wore in simplicity and modesty, "the white flower of a blameless life." Of his many private virtues I shall not speak. Of his professional character I may say in brief, that he was throughout, both to the Great Corporation which he served so long and faithfully and well, and to his private patients a most devoted and reliable "guide, philosopher and friend," to his brethren an "ever present help in time of trouble," and to us all a bright example to emulate and follow.

Of my late, lamented colleague, Dr. J. E. Graham, close association makes me speak with some reserve. I may, however, without impropriety say, what I think all will readily admit, that he was the father in this country of clinical teaching as we now have it ; that he gave a great impetus to the study of Dermatology and of Pathology amongst us, and that from start to finish he held high aloft, unflickering and undimmed, the lamp of science to guide our footsteps and his own. He was himself a beacon for our steering, and setting an example of assiduous applica-

tion, patient perseverance, indomitable energy and pluck, personal probity and large *esprit de corps*, combined with ability and common sense, he showed the way, in spite of enervating influences within, to scale the rugged rocks of opprobrious difficulties and reach the heights of professional recognition and reward.

To refer to Harry Wright of Ottawa, as he was always affectionately called, in terms of moderation is no easy task. Save Osler alone, I know of no man ever in this Association who became in the same degree the personal friend of every one of us. His personal magnetism knew no bounds nor obstacles. Peculiarly situated in that he enjoyed the largest practice in the Capital, he became through the members of both Houses of Parliament intimately known throughout the length and breadth of the Dominion, and from the highest to the lowest in the land, he was everywhere regarded as a true personal friend, a tried and trusted counsellor.

That without notice of his sailing, and free from "the sadness of farewell," he crossed the bar, was a great shock and grief to his innumerable friends, for Harry Wright was manifestly a favourite of the Gods,

"And him on whom, at the end
Of toil and dolour untold,
The Gods have said that repose
At last shall descend undisturb'd—
Him you expect to behold
In an easy old age, in a happy home ;
No end but this you praise.
But him on whom in the prime
Of life, with vigour undimmed,
With unspent mind, and a soul,
Unworn, undebased, undecayed,
Mournfully grating the gates
Of the City of Death have forever closed—
Him, I count him, well starr'd."

The last time the Association met in the City of Toronto (1889), H. P. Wright was President. But it was only a business meeting here, and the Association immediately adjourned to Banff. There it was his grievous task, very lovingly performed, to speak to the Association on the loss it had sustained through the premature death of his uncle, Dr. Robert Palmer Howard, of Montreal, one of the strongest minds ever associated with us, and *facile princeps* in Montreal's always strong contingent. That I am called upon to-day to do a similar office for himself fills me with grief, for "I owe more tears to this dead man than you shall see me pay."

While memory holds her seat in our distracted globes, Harry Wright will never be forgotten ; and the recollection of him will linger longer still, when our haunts of memory echo not, in the records of the hospital which he did so much to found and to foster, thanks to the munificence of that dear wife who was indeed "a helpmeet for him."

Of all these dead friends alike I take my leave in the time-honoured words :—

"Fratres, avete atque valete !"

"Si quis piorum manibus locus, si, ut sapientibus placet, non cum corpore extinuuntur animae magnae, placide quiescatis !"

One word of cheer and I have done. Amongst the recipients of the last "birthday honours," men noted with applause the names of Sir John Burdon Sanderson, Sir Michael Foster, and Sir William Mitchell Banks. These honours were not bestowed for political reasons, for special service to the Sovereign, or to the State as such, but simply in recognition of scientific labours conducted in the laboratory, the dissecting-room, and the ward. That two physiologists and a surgeon-anatomist should be selected for this distinction bodes well for the future of our art, the hope of whose progress and development is wholly based upon our science.

As your mouthpiece on this occasion, let me offer to these gentlemen, our masters and teachers of old, our warmest and sincerest congratulations upon the recognition by the Fountain of Honour of their great merit, worthiness and deserts. Let us wish them long life and happiness to enjoy these honours which were never won more worthily, and which none will wear more "lightly as a flower." Floreat Res Medica !

THE ADDRESS IN MEDICINE.

BY

J. T. FOTHERINGHAM, M.D.

Delivered before the Canadian Medical Association, Toronto Meeting, 1899.

INFANT FEEDING AND INFANTILE DIARRHŒA.

Mr. President and Gentlemen of the Canadian Medical Association :—

My first duty, as it is a pleasure, is to express my high appreciation of the compliment paid me by yourself Sir and your Committee, in inviting me to read the Address in Medicine before our National Association, an Association which exercises the hegemony among all the Medical Societies of the country, as the country does among the Colonies of the Empire. Permit me to suggest in passing that in my opinion our Association has borne no insignificant part, and will bear yet a much greater part, in the forging more closely of the chains that bind into one the once disunited portions of the Canadian unit in Britain's congeries of nations. For you notice that I refer to it as a National Association. I think, too, that I may safely prophesy, though neither a prophet nor the son of a prophet, that we shall from this date gain greatly as an Association by the rising tide of national sentiment, a tide which has risen, I rejoice to say, only more slowly than that greater, more beneficent tide, like the tide of our Mother Land's own universal Ocean, the tide of Imperial sentiment and of quickened love for the Greater Britain, the wide world over, of which we as a nation form only a part—indeed I need only point to the unprecedented success of the present meeting as a proof of the upgrowth of the sentiment of Canadian solidarity, for without that sentiment even the skilful and energetic management of the Committees of the Association would have been much less fruitful of results—but I must ask your pardon for a digression so far removed from the subject of my paper, and come back to the sober fact that I have undertaken a task which I feel is too much for me. I can pretend to no very special knowledge of the subject beyond that which careful reading and conscientious clinical observation can produce, and cast myself upon your indulgence with the request that the discussion to follow may be free, and with the hope it may be helpful both to myself and to us all. The selection of a subject was difficult, and I was influenced in my choice mainly by the fact that it is at this time the one specially prominent in practice. I can assure you that I feel my own limitations, and that, as may seem right and proper in the

discussion of this particular subject, I have the mind “even of a weaned child.”

The importance of the subject need scarcely be insisted upon before an audience like this, to whom the preventability of the “Slaughter of the Innocents” caused by diarrhœal disorders is coming to be known—I have pleasure in presenting to you the following tables kindly prepared for me by Dr. D. McGillivray from statistics placed at my disposal by Dr. P. H. Bryce, of the Provincial Board of Health, to both of whom my thanks are due. These tables have reference to the city of Toronto and the Province of Ontario—and constitute a powerful argument for an educational campaign by this Association against public ignorance in the matter of Infant Feeding. Yet even among ourselves it may be well to look for the beam in our own eyes. I was struck recently by the forceful character of some of the remarks of Mr. Marmaduke Shield in a lecture given in St. George’s Hospital, in London, “On the Management of Some Cases of So-Called Simple Fracture.” After expressing surprise and regret at the little importance attached by students and “especially,” he says, “junior practitioners” to the study of these common accidents, he goes on, with, I fear we must admit, great truth, to single out this very disorder, as follows :—

“It is the same in medicine ; obscure maladies, which usually terminate in pathological investigation and speculative methods of treatment, fascinate the modern student more than the treatment of pneumonia and *Infantile Diarrhœa*. All must fly before they can swim. I regret to say that one cannot excuse teachers and examiners from complicity in fostering this hollow and foolish tendency in modern clinical education. It is most detrimental to after success in practice and reputation.”

After undertaking the preparation of a tabulated statement of the incidence of Infantile Diarrhœas I found that only for the past two years has a satisfactory method been in vogue in the Registrar General’s Office. The Bertillon classification of diseases now adopted is very satisfactory, but previously to 1897 Cholera Infantum, Diarrhœa Acuta and Dysentery Acuta were so mixed up that absolutely accurate statistics cannot be compiled for my purpose. The accompanying tables will clearly show, however, (1) The incidence of the disease by months, July and August, having an especially bad pre-eminence ; (2) The enormous preponderance of deaths from Infantile Diarrhœa before the end of the first year, the remarkable falling off in the second year, and the still more marked “zone of safety” upon which the child enters with the third year, so far as diarrhœas are concerned.

Taking the figures for 1897 for Toronto, as a basis—it will be seen that 31.23 per cent. of all deaths in Toronto occur under one year, and

that 5.15 per cent. of all deaths are due to diarrhoeas under one year. Of the total deaths under one year (977) diarrhoea causes 161, or 16.48 per cent. These figures compare distinctly favourably as regards Infant Mortality with those given for the larger American continental centres.

Further calculations show that there are more than three times as many deaths from all causes in the first year than in the next four years of life put together.

As regards the season of greatest incidence the figures show with the greatest monotony the decided beginning of the epidemic in June, its worse incidence in July, though during August it remains almost as severe, a drop to about one-half in September and its disappearance in October.

TABLE I.—TORONTO.

Showing infant mortality under five years, from diarrhoea. (For 1897 and 1898, figures are for three years and under.) It shows also incidence by months, and incidence by years of age.

	1898.	1897.	1896.	1895.	1894.	Totals.
January	0	0	0	1	0	1
February	3	1	2	1	1	8
March	2	0	1	0	1	4
April	2	2	1	1	2	8
May	1	1	4	5	0	11
June	3	13	16	10	3	45
July	53	22	65	77	61	278
August	48	64	48	53	60	273
September	38	46	17	34	21	156
October	25	14	2	12	8	61
November	4	5	1	1	2	13
December	4	5	2	1	3	15
Totals	183	172	159	196	162	
1st year	173	161	150	178	136	
2nd year	9	10	..	..	..	
3rd year	1	1	9	18	26	

TABLE II.

SIMILAR TABLE FOR PROVINCE OF ONTARIO, 1897.

Total death 25,307; total death from cholera infantum and infant diarrhoea, 1,082, that is about one in every twenty-five deaths in the Province was due to this disease.

January	13	July.....	166
February	18	August.....	338
March	14	September.....	293
April	13	October	103
May	12	November	25
June	52	December	18

1st year.....	925
2nd year.....	121
3rd year	11
4th year	25

Total..... 1,082

TABLE III.—TORONTO.

	1898.	1897.
Total deaths from all causes.....	2,871	3,122
Under one year from all causes	875	977
Under two years from all causes.....	85	91
Under three years from all causes.....	41	62
Under one year from diarrhœa.....	173	161
Under two years from diarrhœa.....	9	10
Under three years from diarrhœa.....	1	1

Investigation from these figures shows that 36.2 per cent. of the total mortality occurred under three years in 1897, and 34.86 in 1898, also that 31.23 per cent of the total mortality occurred under one year in 1897, and 30.47 per cent. in 1898. We find, too, that 5.15 per cent. of all deaths occurred from diarrhœa under one year of age in 1897, and 6.02 per cent. in 1898—and that of all deaths under one year in 1897, 16.48 per cent. were due to diarrhœa, and no less than 19.77 per cent. (one in five practically) in 1898.

TABLE IV.—TORONTO.

	1898.	1897.	1896.	1895.	1894.
1st year.....	875	977	935	979	933
2nd to 5th year.....	192	271	243	303	268

TABLE V.—TORONTO.

Number of deaths from diarrhœa per 1,000 infant deaths occurring under five years and under one year.

	1898.	1897.	1896.	1895.	1894.
Under 5 years.....	171.5	137.8	135.	152.9	134.8
Under 1 year	197.7	164.7	160.4	171.6	145.7

Seibert's interesting investigations show that the temperature curve corresponds identically with the mortality curve of diarrhœa. He says that an average minimum temperature of about 60° F. is needed to start the epidemic, and that it must continue about a week before any marked increase in the number of cases is noted. Holt suggests that the very sudden rise in July is due to the debilitating influence upon susceptible infants of the heat of June—not to any special malignity of the "Dog Days" of July, for the average temperature of July is only 4° F. or 5° F. higher than that of June and August. The figures for Toronto show much greater persistence during August than in New York, where the mortality *over* three years is just about half as great

as in July. The total deaths from diarrhœa in Toronto for the five years, 1894-98 inclusive, being 278 for July, 273 for August, 156 for September, and only 44 for June and 61 for October.

TABLE VI.

SHOWING TEMPERATURE DETAILS FOR YEARS 1894-1898 (INCLUSIVE.)

	JUNE.			JULY.			AUGUST.			SEPTEMBER.		
	Average Temp. for month.	Difference from average for 58 years.	Highest daily Temp. during month.	Average Temp. for month.	Difference from average for 58 years.	Highest daily Temp. during month.	Average Temp. for month.	Difference from average for 58 years.	Highest daily Temp. during month.	Average Temp. for month.	Difference from average for 58 years.	Highest daily Temp. during month.
1894.....	66.45	+4.24	90.7	69.10	+1.48	89.19	65.29	-0.09	85.1	62.25	+3.72	84.1
1895.....	67.90	+5.61	93.1	66.23	-1.41	90.00	65.09	-1.17	84.0	60.63	+2.03	93.1
1896.....	64.75	+2.36	86.3	68.72	+1.10	91.3	67.49	+1.28	89.9	57.41	-1.22	86.3
1897.....	61.3	-1.12	84.4	72.11	+4.49	93.3	64.75	-1.54	82.8	60.84	+2.23	93.2
1898.....	65.42	+3.01	90.5	70.5	+2.79	95.5	69.72	+3.48	96.0	62.8	+4.15	97.1

You will have noticed that in 1897 the mortality for July was only 22, while in the other four years of the series it was 53, 65, 77 and 61. So remarkable a difference called for some explanation, which lies ready to hand in the accompanying Table No. VI., showing among other particulars, the average temperature for June, July, August and September for the five years to which the mortality tables apply. The exceedingly interesting fact is thus elicited that the July for which the mortality was so low, was preceded by a June in which the average temperature was only 61.3° F., nearly 4° F. lower than the lowest June in the series, and nearly 7° F. lower than the highest June of the series. This July of low diarrhœal mortality, however, was itself much the hottest July of the series, 4.49° F. hotter than the average July in 58 years. We find consequently that the August following had a mortality of 64, much the highest August in the series, and was followed by a September of exceptionally high mortality, 46. In other words, the epidemic of 1897 was delayed a whole month by the low temperature of June. The months of greatest mortality were August and September instead of July and August, and the net result was the same as in an average year.

Seibert's view as to the correspondence of the heat-curve with the mortality-curve is thus amply borne out by the data for Toronto, as is also his statement that an average of at least 60° F. is necessary for the development of the epidemic. And Holt's theory that the heat of June is the cause of the July mortality is strongly confirmed.

Jennings, of Detroit, in the Address in Medicine before the Michigan State Medical Society this year, tells us that "In Detroit, for the year ending July 1, 1898, thirty-five per cent. of the total deaths were under

the age of five years, and twenty-five per cent. under the age of one year. Most of the deaths under one year are due to nutritive disorders directly or indirectly the result of improper feeding."

If further argument were needed, one might quote Emmett Holt in his address of last year to the American Pediatric Association, in which he states that during the past eight years, of 151 children left under his care during their entire infancy not one had died, though only thirty of the number were breast fed during most of the first year and ninety were entirely bottle fed. From enquiry among physicians in New York in the same field of practice, Dr. Holt further concludes that "in the well-to-do classes, with the best care, the mortality from all causes during infancy does not exceed two or three per cent., as against a general mortality for this period among all classes of about twenty per cent. These are most healthful signs and show the possibility of a very great reduction in infant mortality everywhere with a better understanding of all conditions, but especially of infant feeding."

As regards the title of my paper I wish to say beforehand that I intend referring to Infant Feeding only in so far as it is a cause of Infantile Diarrhœa, and of course, also in so far as it bears upon treatment. The feeding of the normal infant I do not intend to take up, more particularly as the programme includes a paper upon this subject from my friend Dr. A. R. Gordon, of this city.

After a resumé as concise as possible of our present knowledge of the Physiology of Infant Digestion it would seem logical to proceed to the discussion of the Bacteriology and Pathology of Infantile Diarrhœas, and, therefore, endeavour to classify them in various ways, upon basis clinical, anatomical and bacteriological in hopes of clarifying our thinking and rendering our diagnostic habits more orderly and exact. The main part of the paper will then follow, a discussion of the treatment of these affections, dietetic, hygienic and medicinal. The drugs recommended I think it better to treat by themselves, in groups, as Stimulants, Digestives, Purgatives, Astringents, Antiseptics, Sedatives, and so on.

With regard to the Physiology of Infant Digestion, it differs as is well known now in certain important respects from that of Adult Digestion. Rotch divides the life of a child as regards nutrition into three periods, first, the first year; then the second and third years; and third the remainder of childhood. The natural aliment for the first of these periods is, of course, breast milk. First, as regards digestion in the mouth. During the first year at any rate till the teeth appear, the mouth bears little relation to digestion, less than in adult life, its function being merely the mechanical one of suckling. The saliva is

practically absent, being unneeded, till the tenth or twelfth week, and with the advent of the teeth and the possibility therefore of a less fluid dietary, the saliva becomes more abundant, and much more actively diastatic.

Then as to the stomach, first as to its capacity, the interesting measurements given by Rotch and others may be boiled down for all necessary purposes to the following :—

- 1 oz. at birth.
- 2 ozs. at two weeks.
- 6 ozs. at six months.
- 9 ozs. at twelve months.
- 12 ozs. at eighteen months.

The position of the organ in the baby is more vertical than in the adult, mainly because of the undeveloped condition of the fundus, which practically does not exist till the teeth begin to come and the diet to be altered, a very interesting point if we remember the physiology and functions of the adult fundus.

The secretions of the stomach are three, pepsin, hydrochloric acid and the rennet ferment, Hammarsten's lab-ferment. The latter is much the most important of the three, as it is the precipitating agent, causing coagulation of the proteids.

The functions of the stomach then are mainly two-fold, first, it is a reservoir, and second, it coagulates the proteids and sends them on for intestinal digestion. To these two duties of course must be added the partial digestion of proteids (usually only very partial), and the absorption of fluids, peptone and crystalloid material, *e.g.*, sugar.

The stomach of the nursing baby under one month is usually empty one hour or a little more after feeding. This period slowly lengthens until at eight months or so it takes two or three hours to empty its contents into the duodenum. This is very interesting when considered in connection with the normal physiological interval for feeding, the child up to two or three months usually insisting upon being fed every two hours, and the interval gradually lengthening to three or three and a half hours. So that the infant if left to itself will, by the promptings of animal instinct, give the stomach quite the same proportion of physiological rest as the adult does, indeed probably much more punctiliously than most adults do. The duration of stomach digestion is much prolonged if cow's milk is the food, or if disease exist.

Third, as to the Intestine. This is much the most important portion of the Alimentary Canal. It is less closely tethered up by the mesentery than in the adult—the duodenum is much smoother and freer from folding and pouching than in the adult, a circumstance connected as

Rotch points out with the fact that there is less need for delay of its contents in the infant than in the adult.

It is interesting, too, to note that while in the adult a ratio in length between the large and small intestine is respectively about as five to one or one and a half, in the infant it is as nine to one and a half, a fact suggestive of the great importance of the small intestine in the child, and portentous as to the ill-results in the infant of derangement of its functions as in cholera infantum.

The most active secretion in the small intestine, as in the adult, is the pancreatic juice which is active in the digestion of fats from the very first, and which digests the larger proportion of the casein from the stomach. The large size of the liver at birth bespeaks the importance of the bile as a peristaltic stimulant, and as an assistant in the digestion and absorption of the fat which the nursing infant gets in such large proportions. The bile doubtless assists in preventing in the infant the constipation which would prevail in the adult upon a similar diet.

The colon, as in the adult, is a reservoir for fæces, digestive power being absent and absorptive power slight.

We turn now to the Bacteriology and Pathology of the Alimentary Canal.

Normally at birth the whole canal is sterile, but in a few hours bacteria are found throughout its whole length. The stomach, as a rule, is practically free, except in disease, but in the intestine there are two obligatory or constant forms. Escherichs was one of the original investigators in this direction, and Krus, Biedert, Baginsky, Lesage and many others have added to his work. On this side of the water, Booker's exhaustive investigations are indispensable to any one wishing to study the subject, especially his communication in the Johns Hopkins Hospital Reports, Vol. 6, 1897. It has been found that the two obligatory bacteria in healthy nurslings are *B. lactis aerogenes* and *B. coli communis*. The first form thrives in the presence of milk sugar, and is, therefore, most abundant in the upper parts of the small intestine—the *B. coli communis*, as its name implies, prefers the lower small intestine and the colon. In diseased conditions these normal relations are disturbed and the bacteria are formed in enormously increased numbers in other than their own portion of the canal, with new-formed and greatly increased toxicity, and in company with others of upwards of thirty different varieties in different cases as studied by Booker, and including various micro- and strepto- cocci and bacilli the exact bacteriological condition cannot of course be clinically determined in each case, but it may vary from the simple non-inflammatory dyspeptic diarrhœa with no bacterial abnormality, to the severest streptococcus gastroenteritis, with all sorts

of bacterial combinations and grades of clinical severity between, which of course makes classification very difficult, as we shall see. Various forms of *Proteus vulgaris* are common, and usually in severe cases.

As regards the Pathology of Infantile Diarrhoea, it is not necessary that I should occupy your time with any discussion of the lesions of the alimentary canal. I prefer to pass on to a brief statement of the lesions found secondarily in other viscera. Suffice it to remind you that the most fulminant cases may be those in which death is due to toxins which leave behind but little trace of damage to the alimentary mucosa anywhere; while in other cases, the mucosa is found in any stage of destruction, from mere hyperæmia and superficial loss of continuity to severe inflammation with infiltration by leucocytes, erosion, necrosis and sloughing right through to the serous coat, luxuriant bacillary invasion of the tissues of the bowels and chronic ulceration of the bowel if life be sufficiently prolonged.

From the classical investigations of Booker we gather information which I have summarized as follows:—as to the morbid anatomy of the other viscera.

(1) In acute cases:—

1. The spleen—always hemorrhagic, large and juicy, with distended vessels and extravasations, and often focal necrosis in the lymph nodules like that in the solitary glands in the intestine—is frequently infiltrated with the same bacteria as found in the intestine.

2. The liver—nearly always engorged with blood, the cells separated by widely distended capillaries and showing fatty degeneration or becoming necrotic.

3. The kidneys—some cases show presence in kidney tissue of the intestinal bacteria, *B. coli comm.* and *B. lactis aerog.* Every case shows necrosis of epithelium in convoluted tubules—the capsules of the glomeruli sometimes show signs of inflammation or are plugged with coagulated albumen, and the tubules sometimes contain hyaline casts, especially if the case is somewhat chronic—the kidney as a whole is usually enlarged, congested, with marked striations, and capsule stripping off easily.

4. The lungs—give cultures of bacteria more frequently and with greater luxuriance than any of the other viscera, *B. lactis aerog.* and *B. coli communis* most commonly, Booker saying expressly that “the gastro-enteric canal is the starting-point of the general infection,” and that “the same bacteria found in cultures from the stomach and intestines appear in cultures from the other organs.”

Lobular hemorrhages of greater or less extent are often seen: the bronchial tubes are more or less filled with mucous and broncho-pneu-

monia of more or less severity exists, always recognized as an almost necessarily fatal complication.

(2) In chronic cases, meaning either those which begin without great acuteness or which have survived an acute attack of say three weeks (Holt says six weeks), the prevailing lesions are much the same as detailed in acute cases, with differences due to longer duration of the lesion, for instance the kidneys contain hyaline casts, and show more markedly necrotic condition of epithelium especially of convoluted tubules. In one case Booker noted that "the brain surface was covered with a thick layer of bacteria."

1. The spleen—of twelve examined, ten showed hæmorrhage, sometimes very extensive—six showed focal necrosis in the lymph nodules.

2. The liver—of ten examined all showed great capillary distention, and all showed cell necrosis, often of the entire lobule, and, if less severe, limited to the centre of the lobule. Miliary abscesses may occur if life be sustained for a sufficient time.

3. The kidneys—of eleven cases only one seemed normal. All the rest showed as the most constant lesion necrosis of the epithelium of the convoluted tubules. Hyaline casts were common. Intracapsular inflammation, though rare, was noted.

4. The lungs—only one case seemed normal out of twelve. Almost constantly, lobular pneumonia of more or less severe grade was seen, with bacterial invasion of lung tissues often very luxuriant and hæmorrhage, and sometimes consecutive atelectasis.

As regards relative importance, Booker finds, as clinical experience would lead us to expect, that lesions of the lung are the most serious. Next in importance are those of the kidney, while those of the liver and spleen are neither so constant nor so disabling. Booker states also that "a direct relation between the bacteria and the lesions in the solid organs is seldom demonstrable, except in the lungs. . . . In other organs the lesions resemble those resulting from the absorption of the toxalbumen products of bacteria," such as necrosis of kidney or liver epithelium.

It is accepted as proved that there is no specific organism of the disease and a very important point is the fact now generally admitted, that the normal bacteria, particularly the *B. coli comm.* may develop varieties of great toxicity. What the conditions are that produce this variant growth is not yet known. But one proof of the truth of this view lies in the report made by Lesage on his attempts at the serum treatment of infantile diarrhœa, in *Rev. de Therap. Med. Chir.*, No. 24, 1896. His serum was obtained from asses after injection with colon bacilli from virulent milk or stools. Twenty-six out of fifty-two children treated with this serum (exactly fifty per cent.) lost all marked

symptoms in less than forty-eight hours, fourteen were improved, and twelve unimproved. In all cases where the stools were green the color disappeared after the injections, and what is singular, unless the theory of variation in toxicity of colon bacilli be wrong, he found that the serum obtained from asses after treatment with the colon bacilli of normal stools did not give these results. (*Blackader*, in *Sajous' Cyclop. Pract. Med.*, Vol. 4.)

As regards the third main head in the plan of this paper, namely, classification, I beg you to bear with me if I first of all lay what may seem to be undue stress upon the importance of it. Diagnosis, oftentimes sufficiently difficult in concrete cases, is manifestly impossible unless we carry in our heads clear conceptions of the varieties of the disorder. Of course we assume that typhoid fever, the acute specific fevers, particularly scarlet fever and pneumonia, and intussusception, are all excluded.

A clinical classification may first be attempted, based upon the symptoms. Thus cases may be :—

(1) *Acute*. (a) Acute intestinal inflammation from the first, with little constitutional poisoning thus corresponding to the adult type.

(b) Virulent toxæmia or even general infection with little evidence of intestinal lesion.

Or (2) *Chronic*, in which :—

(a) Intestine shows severe and obstinate ulcerative inflammation, or

(b) Persistent malnutrition and loss of assimilative power with little or no inflammatory process.

Again, while the primary trouble in all cases is the gastroenteric infection, in some cases the outstanding symptoms soon cease to be those due to lesions of alimentary canal, and come to be those due to lesion in other organs, especially the lungs and the kidneys.

Blackader, of Montreal, in a very helpful and exhaustive article in *Sajous' Cyclopedia of Practical Medicine*, Vol. 4, adopts *Booker's* bacteriological classification, with a little modification as follows :—

1. Dyspeptic non-inflammatory diarrhœas, functional due to ingestion of irritants, usually food, and most frequently milk.

2. Inflammatory diarrhœas in which the symptoms of a toxic systemic infection are predominant.

3. Inflammatory diarrhœas, in which in addition to the systemic infection the local inflammatory conditions produce marked symptoms.

4. Chronic diarrhœas, in which the acute inflammatory symptoms have more or less subsided, but in which the stools remain abnormal both in character and in frequency, and nutrition is apt to be much impaired.

This latter class is in our opinion a very useful addition of *Black-*

ader's to the more purely bacteriological classification of Booker, which is shortly as follows:—

- (1) Non-inflammatory dyspeptic diarrhœas.
- (2) Streptococcus gastro-enteritis.
- (3) Bacillary gastro-enteritis.
- (4) Mixed cases.

The latter class of course includes by far the larger number of cases seen in practice.

Still another classification, and I think the most useful of all, is based on anatomical considerations—and it becomes a duty to decide at once whether a case is one of enteritis, colitis, or enter-colitis, since radical differences exist in the treatment to be adopted in each case. For instance, neither opium nor irrigation of the bowel can be said to be so necessary in enteritis as in colitis with small frequent slimy and blood-stained stools, tenesmus, and often prolapse of the rectal mucosa. Nor would bismuth be nearly so useful in colitis as in enteritis, with its large watery, often foul-smelling dejections.

Coming now to the last and most important subject of treatment, permit me to say first, that the necessity for explicit detailed directions in writing is very urgent in all these cases. Only in this way can you impress upon the lay mind the absolute essentiality of what seems to them unimportant details. Particularly in regard to feeding should orders be written out as to composition of food, and quantity and frequency of feeding. I am accustomed, in my attempt to bring the mother's mind around with a wrench to my way of thinking, to tell her that if I were compelled to choose between medicine and food in the treatment of a case, I should not hesitate to throw medicine away and trust to proper feeding. Yet of course, as we all know, we must usually give some medicine, both for its own sake and as a matter of policy, especially in those chronic cases, which for our sins do sometimes afflict us, unless we actually maliciously wish to encourage our patients to leave us for some practitioner who will give them a small sugar pill every fifteen minutes, an experience through which those of us at any rate who practice in urban communities do sometimes pass.

As regards feeding, I should almost apologize for saying first, that an entire and absolute change of diet is a *sine qua non*, and in acute cases the diet has been of course usually milk. The very great value of prompt intervention in acute cases, and of the giving for twenty-four hours, at least, of nothing but from one to two ounces, every two hours or oftener, of sterilized water, to which a pinch of salt and a taste of sugar, preferably milk sugar, has been added, cannot be disputed. It is borne out both clinically and by the fact noted by Booker that "none of the bacteria isolated (from the stools) were found to be capable of multi-

plying in ordinary hydrant water forty eight hours after it had been inoculated ; in all such cases negative results were obtained." After the first twenty-four hours or so are passed it may be well to attempt the use of some nutritive fluid—and at the outset one must decide whether to use albuminous or farinaceous materials. If the stools are not specially foul albumens may be given and the best one is probably egg-water. White of egg contain about ten per cent. albumen and should be diluted with about ten times the bulk of sterilized water, with a little salt and a taste of sugar, as it is stated by Biedert that a solution of albumen stronger than one per cent. cannot be digested as a rule by even the healthy stomach, and it is found in practice that a "3-6-1 mixture" as it is called (three per cent. fat, six per cent. carbohydrates and one per cent. proteids) is a very generally useful form of modified milk, approximating closely an average breast-milk. Another good albuminous food is the red meat juice in drachm doses added to the water or other fluids that may be in use. Liquid peptonoids, panopepton, and so forth, may be mentioned in this class. As to the farinaceous fluids, they are all of the same type, and may be equally well made from barley, rice, oatmeal, sago, tapioca, corn starch, or arrow-root, so long as one bears certain points in mind. One point is that the more vegetable albuminoids there are the better and that, other things being equal, the husk and the layers of the grain next it should be boiled as well as the starchy contents of the grain.

Another point is that very thorough boiling is necessary, three to four hours at least, to cause diastatic change and prevent trouble from the indigestible starch. Thorough straining, too, is important. The consistency of a farinaceous fluid should be that of thin to medium cream, such as will pass easily through an ordinary rubber nipple. And now that the nipple is mentioned it is worth while remarking that if the stomach is irritable it is very often due to the fact that the hole in the nipple is too large and the child swallows too rapidly.

One of the most useful of all the starchy preparations is likewise the oldest, the good old bag of flour the size of the lower half of the forearm boiled steadily for ten hours. The outer shell is thereafter removed and the firm central part, like a piece of soft white, bathbrick, grated down and slowly reboiled as required with water to make a gruel of a consistency varying with the age of the child. For children over six months at any rate this is a most useful food in diarrhoeal conditions.

One will often find whey very useful, made either with sherry, or what I think is better, essence of pepsin or junket-powder. It makes an excellent vehicle for liquid peptonoids or red meat juice.

Fischer, in a recent number of the N. Y. Med. Record, speaks highly of very weak cold tea, especially when stimulation is desired, and of

an acidulated drink made by adding to a tumblerful of plain boiled and cooled water five to ten drops of dilute hydrochloric or phosphoric acid, and sweetening with a little glycerine (a powerful antizymotic) or saccharin.

It is well on inaugurating the change of diet to try to lengthen the interval of feeding—always bearing in mind the urgent need of water to replace the fluids drained from the tissues by the diarrhoeal loss. Thus, if a child has been getting four ounces, two of milk and two of barley water every two and one-half hours, one should try to give instead say four ounces of barley water with a drachm of red meat juice every three to three and one-half hours. As regards temperature, either extreme seems to me bad, particularly in young infants. Some say that the food should always be cold. This may apply to children of ten to twenty months, but in infants of say three months it aggravates pain and has no counterbalancing advantage.

The return to milk should be very tentative. Casein should be allowed last, and fat first in the shape of small quantities of cream, say half to one teaspoonful at each time of feeding, added to the barley water or other farinaceous fluid, and slowly increased. The cream should never be bought as such, but obtained by removing the top two inches from the jar which has been left five or six hours on the ice.

Rachford goes so far as to say that “cream is theoretically never contraindicated, and can do no harm in any form of a disease, but will be found to serve the best purpose in chronic cases and after the third or fourth day in acute cases.” My own clinical experience will hardly tally with the statement that “cream can do no harm in any form of the disease.” The same writer goes on to say that “meat broths contain so little albumin and carbohydrates that . . . they may be given at any time, in either acute or chronic cases, but they are specially indicated in a few cases after the first twelve or twenty-four hours treatment.” One danger in their use lies in the fact that they are very apt to be kept far too long after making, for they very promptly turn stale. A contraindication to their use would be foulness of stools or great frequency and copiousness. If the morbid process be mainly a colitis they can be given more freely.

As regards Hygienic measures—one of the very first importance is coolness. During the febrile stages one often sees the little sufferers wrapped up so warmly as to add decidedly to the rate of their exhaustion. The room should be quite cool and airy, and not too bright, for the nervous sensitiveness of the patient is sometimes excessive. Cool sponging, with alcohol or some toilet water is very beneficial. On the other hand, if the febrile stage is over, many babies are very much the better of the warm water bag in the cradle. Cold feet and hands call

for this measure. And it is often most relieving and soothing to the child, especially in that type of extreme fretfulness and restlessness which usually accompanies nephritis when it occurs, to put him in a hot pack. I have been most gratified with the result of this expedient whenever adopted. And even in feverish cases when fits of abdominal pain come on, the soothing effect of a hot compress over the abdomen is often most marked.

Of course a child acutely ill should not be mauled or handled, nor taken out in the carriage, and so on, but when convalescence has begun the revivifying effect of pure fresh air as by a sail of a few hours, or an afternoon at say Centre Island here, is remarkable. I was never so struck by this as in the case of an American child brought here very ill from Old Point Comfort, Virginia. I saw him, after the warm season was well on, the day he arrived in Toronto, and he was very sick, emaciated and languid. The next day his mother brought him to my house and I took for granted at first sight that this was another of her children so different was the brisk, active and actually comparatively plump child from the feeble sufferer of the day before. I am certain that it was not food or medicine mainly that produced in twenty-four hours so astonishing a change.

Another hygienic measure worth noting is the careful disinfection of the diapers by boiling. And the nurse should be instructed always to keep the last diaper till another one is soiled for the inspection of the physician when he comes.

As regards medicinal treatment, the first drug group to be mentioned, because it is the one first employed, should be *Purgatives*. The best of these is usually castor oil, unless forbidden by marked gastric irritability. I usually employ a sweet castor oil, the composition of which I know, containing ninety-nine per cent. oil, with a little Saccharin, essential oil of almonds and an aromatic ether or two. Castor oil has a great advantage of being speedy and painless unless too large a dose is given, and of having a subsequent constipating effect. It has also a mechanical lubricating effect, making it specially good in the early dyspeptic stages of the disorder for the sweeping out of curds, seeds and other offending matter.

The only other purgative of repute is calomel. Lesage prefers calomel if the stomach is suitable. He has two ways of giving it, first, small repeated doses, say one-tenth to one-fifth grain every one-half hour till bowels move, if there be slight fever, soft abdomen, little tympanites and copious stools: and, second, one large dose where the case shows high fever, much distention and foul smelling and scanty stools. The dose he considers should be for an infant under three months one grain, under one year two grains and under three years three grains.

Other purgatives such as senna, rhubarb, salines and so forth, are all more or less bulky and unpalatable, or are objectionable in their mode of action.

As regards *Stimulants*, alcohol stands easily first. They are nearly always needed, especially after the acute stage is on. And even from the first, alcohol acts excellently as a carminative, relieving gastric flatulency. An infant does not need in the most extreme cases, say of broncho-pneumonia, more than two ounces in twenty-four hours, and in diarrhœal conditions two to four drachms is usually plenty. It is better to mix the daily portion at one time, say two drachms in three to four ounces of sterilized water and give as required. I prefer good brandy for babies, as when diluted it is sweeter than whiskey and they take it better. Wines are not usually good, being either too sweet or too acid and more apt to disagree. Holt says that in the acute gastro-enteric diseases the depletion is often so great and there is so little absorption of food that the patients must, in certain cases, be sustained by alcohol for several days. We need scarcely, however, nowadays add the warning that the drug should not be used simply from routine.

Other stimulants are ammonia, especially as the aromatic spirit, and caffeine, as cold tea or coffee.

Antipyretics as a class have but small place in the treatment of diarrhœal disorders.

Quinine I should not recommend at all, both for its unpalatability, and because it upsets the stomach. Besides I can see no therapeutic advantage in it.

Of the three coal tar products, phenacetine, antipyrine and antifebrine, the first is the least objectionable in all ways, and is often most useful, not as an antipyretic, though of course it acts so incidentally, but to control excessive nervous irritability, particularly in cases where a mild diarrhœa threatens to complicate dentition. In severe diarrhœas it should, I think, never be used, for depression will be quite severe enough without it, and water can control the temperature and the nervous symptoms as well.

Antiseptics should *a priori* be most useful, from what we have learned of the bacterial conditions in the alimentary canal. But in practice disappointingly small results are obtained. Foulness of stools is a special indication for their exhibition.

Salol is put first by some. I think it very risky as nephritis is an ever present danger in severe cases and the infantile kidney is peculiarly susceptible to the action of carbolic acid—I have ceased its use altogether.

My favorite is bismuth salicylate, from one-half to three grains according to age. It is sometimes ill-borne and irritating. Others are calomel,

bichloride of mercury, biniodide of mercury in one-fiftieth grain doses, usually with potassium iodide. "Of eighty cases, seventy-two cured in two days." (Luff, B. M. J., Nov. 16, 1898, quoted by Blackader, Sajous, *Cyclo. Pract. Med.*, Vol. 4.)

Arsenite of copper, benzonaphthol, menthol and thymol in one form or another; creosote and carbolic acid, are all open to the objection given above; resorcin is very highly spoken of by Fenwick, in three or four grain doses every four hours even to very young infants. I have used it and find it, I think, useful and certainly very readily taken, in syrup and, say, elixir of lactopeptine. Endoxin is one of the new iodine and bismuth preparations, nontoxic, dose one grain every hour to a child a year old. I have no experience of it in this connection.

As a class antiseptics are depressant to the heart and are of doubtful utility. Plain sterile water in large quantity, ten or twelve ounces a day, will control an acute diarrhœa better (and meet other indications besides) by replacing the fuel on which the conflagration in the intestine feeds.

Astringents are theoretically most useful, but practically in the diarrhœas of infants are of very little value. They should be preceded by purgation. Bismuth salts come first, and of these best the subgallate unless one wishes the antiseptic effect of the salicylate. Two to four grains every two hours may be given to a child one year old. Holt declares his preference in the great majority of cases for the subnitrate, but says that at least two drachms a day should be given to a two years old child. Tannic acid, of course, in one form or another, usually a vegetable extract like tinct. of kino, catechu, and so forth, is a very old remedy, but modern practice relegates it to a secondary place. Properly used it is most valuable. The newer forms of it, tannigen and tannalbin do sometimes act very well. Tannigen acted like magic for me this year in doses of three or four grains every four hours in a little white sugar, with a child of ten months which had a persistent chronic diarrhœa mainly due to fermentation in the small intestine. The stools were at once reduced from eight to twelve daily, to two. But in acute cases, and indeed in the majority of cases, I think that experience is showing that recovery is not so rapid as when other treatment is adopted. Certainly when severe derangement of secretions exists I have seen tannalbin come through into the bed pan practically unchanged and without effect. As much as forty-five grains a day may be given to young babies, and excellent results are reported, chiefly from the continent.

Digestives are of great importance, for reasons that it is superfluous to detail. They may be used to predigest the food or be given as medicine. I find lactopeptin either as powder or elixir most useful. Ingluvin,

pep-in, pancreatin, &c., are only to be mentioned. As a class they are naturally of more service in chronic than in acute conditions, for in the latter, food is largely withheld as already seen.

Opiates—This class has been purposely left to the last, on account of its great importance. Opium will never lose its value in the treatment of Infantile Diarrhœa, though latterly it is perhaps more intelligently used, and one is struck on reading recent literature at the infrequency of any illusion to its use. The best form is I think paregoric, for many reasons, palatability, its other constituents, and the fact that it contains opium and not morphine alone. Dover's powder is most useful, but its taste is objectionable. Chlorodyne is too hot, and besides contains not opium but only morphine which has more marked constitutional and less local effect on the bowels. Codeine is too mild a narcotic and in young babies a too decidedly tetanizing agent, as I have seen. Chloral, belladonna, hyoscyamus and so on have no place in the treatment of this disease.

The very first rule to lay down about opium is that until a purgative has been given it should not be administered. The next rule is that the dose should not be repeated till the effect of the last one, if full, has passed off. And another, which would seem to lie fairly on the surface and yet is constantly neglected, is that opium should not be given in the same mixture with other medicines, but must be kept by itself and given as occasion requires only.

The chief indication for opium in acute cases is pain. In colitis, with tenesmus and its other characteristics, it is a necessity from the start, and I prefer to give it here in the form of laudanum in a very little, cool, thin, starch paste as an enema, repeated when expelled.

In chronic cases, and especially in cases, often seen, in which feeding brings on excessive peristalsis with pain and evacuation of the bowels, it is often quite indispensable. In the latter case I usually order two to ten drops of paregoric half an hour before feeding, according to the age of the child and the length of the interval between feedings. Holt remarks that nothing requires nicer discrimination than the use of opium in diarrhœa. Of course even with these little patients caution is needed and opium must be discontinued as early as possible, for they soon learn to give it up with a bad grace.

Irrigation—It will not do to close this paper without reference to the use of irrigations. First as to lavage of the stomach. I have never employed it, as the conditions upon which private practice is conducted here practically preclude it, and I cannot help thinking that the great majority of cases we see get along very well without it. Intestinal irrigation is quite another matter. It is undoubtedly most valuable, especially at the onset of any acute case, and throughout the course of a

colitis or enterocolitis as against a simple catarrhal enteritis. The cold irrigation is a valuable antipyretic measure, but one to be used with caution, as it may depress before one is aware. The hot irrigation is of value, especially if normal saline solution be used, in cases of great prostration and collapse, and ranks only second to interstitial injections as a stimulative and restorative measure. Irrigations to be effective should be done by the physician, or at least by a trained nurse. Parents cannot usually do it properly. Holt says that they are advisable in all cases, and should be done at once on seeing the child, two or three times the first day and once a day afterwards. As to the medium to be employed, the day of medicated water has passed, and very properly so far as antiseptics are concerned, unless it be boric acid. Sterilized water or normal saline solution is all that is advisable, except in cases of chronic ulcerative colitis where weak astringents, such as tannic acid ten to thirty grains, or extract of witch hazel, two drachms, or nitrate of silver five grains, to the quart may be of service. Some authorities disapprove of nitrate of silver in all cases and certainly with reason in acute cases. This kind of irrigation should be kept up for fifteen minutes or so each time, and it is sometimes of advantage to follow it by the injection of three or four ounces of a much stronger similar solution which is to be held in for a few minutes by pressing the buttocks together.

In conclusion, Mr. President and Gentlemen, speaking in the cold-blooded terms of the Malthusian brotherhood who love Political Economy, let us remind ourselves that no province of the *Ars Medendi* is so fraught with direct benefit to the State as that which saves to the State the lives of so many little citizens useful *in posse* to the Body Politic. And who can estimate just what they are *in esse* to the family, or calculate the lessening of human sorrow, the saving of pain to those who are so completely at the mercy of the careless and the ignorant, though they be usually well meaning? If it be true, as Cicero says, that "In no point do men come nearer to the Gods than in giving health to their fellow-men," it must be true that even this point is over passed when we can bring help to those little ones who "rule by the Right Divine of helplessness," as Longfellow says in the *Hanging of the Crane*, so redolent, like all his work, of that domesticity which is the crown and flower of the physician's relations with the public, and which attains its fullest growth in the treatment of infantile diseases.

We cannot expect sudden success in our educative efforts, for though Minerva, the Goddess of Knowledge, sprang full armed from the head of Olympian Jove when Vulcan did a craniotomy upon him with his axe, miracles of knowledge are not nowadays so performed: and if this effort of mine, and the discussion which may follow, accomplish some small share in the task I have outlined, I shall feel amply rewarded.

THE ADDRESS IN SURGERY.

BY

WILLIAM B. COLEY, M.D., of New York.

Delivered at the Canadian Medical Association, Toronto Meeting, 1899.

THE RADICAL CURE OF HERNIA.

To the Members of the Canadian Medical Association, Gentlemen :

I come before you to-day with mingled feelings of pleasure and anxiety, due on the one hand to a deep appreciation of the high honor conferred upon me by your invitation to deliver the "Address in Surgery" before such a distinguished gathering, and on the other to a fear that I shall fall far short of your expectations.

I am aware that time-honored custom and tradition call for a very general subject, such as the Art of Surgery, Advance in Surgery, and the like, but a somewhat careful study of recent addresses has convinced me that this ground has already been gone over so frequently and so well that I trust you will pardon me for choosing a subject, which though somewhat special in character is still one of universal interest and of rapidly increasing importance to the medical profession, viz., *The Radical Cure of Hernia*.

It is impossible to view the present methods and results of the operative treatment of hernia in the true perspective without a brief survey of the past, stopping here and there for a moment to note the more important landmarks.

The historical picture presented, shows that this evolution has not been a gradual and harmonious development, but rather a series of brilliant conceptions based on more or less sound anatomical principles. At one time commanding the respect and confidence of the leading masters of surgery of the day, and at another relegated to quacks and travelling rupture curers, who alone kept them from falling into utter oblivion, until under the new stimulus caused by the great discoveries of *anæsthesia* and *antisepsis*, they were again revived and elaborated.

While we find occasional references to hernia and its treatment in the writings of the early Greeks, the first recorded description of an attempt to cure the condition by operation was made by Celsus, a Roman who lived during the first half of the 1st century, A.D., and to him must be given the honor of being the founder of the radical cure of non-strangulated hernia. Although we do not possess a careful description of his method, we know that he possessed a very good conception of the anatomo-

mical and pathological conditions present, and that he actually proposed and successfully executed many of the steps which even to-day form the most important features of our modern methods.

His operation consisted in a free open incision over the hernial tumor, exposure of the sac, and probably the removal of the whole or a part of the sac. If the omentum was present it was pushed back if possible; if not, a needle was passed through the middle, and it was then tied off in two portions. The wound was then closed by sutures. The testis was not removed, and care was taken not to injure the cord in the dissection of the sac. At that time this procedure must have been regarded as radical to the degree of rashness, and we are surprised to find in his rules for the selection of cases for operation evidence of such sound judgment and rational conservatism.

He operated only upon children between the ages of six and fourteen years of age, and, moreover, only on subjects in good health with comparatively small herniæ. He recognized the fact that these cases were the most likely to withstand the risks of operation; furthermore, that in them the chances of ultimate cure are greater than in any other class of cases. He advised against operating upon umbilical hernia in children, knowing, what many surgeons to-day have failed to learn, viz., that umbilical hernia in children is almost without exception cured by nature without operation. *Heliodorus*, who flourished under Trajan at the beginning of the 2nd century, has given us a description of a method of operation for hernia which actually surpasses many that are now offered to the profession as new and ideal.

He says, "We must cut off the hernial sac with great care, for if you take away less than is protruded, the result will be the production of a new hernia. In order, therefore, that we may not miss excising an amount that is precisely correct, it is necessary to draw the sac outward by catching the tip. So soon as the edges of the abdominal wound begin to be everted, enough of the peritoneum has been drawn out, and so much is to be excised. When just enough peritoneum has been drawn out the sac is to be twisted. Having been cut off along a straight line, the peritoneum becomes folded upon itself, and screwed up and closed so tight that not even the point of a probe can be introduced."

As Halsted, writing in 1893, has well said, "With the exception of torsion of the sac, which we replace with suture, the operation for the radical cure of hernia in the time of the Roman Emperors was quite on a par with the operation as usually performed in our day."

A few centuries later this operation had been abandoned and forgotten.

Paul of Aegina, in the seventh century, following in many points the methods of Celsus, introduced a new and radical step, viz., castration. Without attempting to separate the cord from the sac, he transfixed the

sac with a "large-sized needle containing a double thread." This thread was then cut and the ends crossed like the great letter X, and tied. The portion below the ligature, with the testis and cord, were then cut away.

It seems difficult to understand how this method, so inferior to the methods of Celsus and Heliodorus, should have survived almost to modern times, while the former were so soon forgotten.

For bubonocoele, Paulus devised a method of operation which necessitated neither the removal of the testis nor the opening of the peritoneum. He incised the canal, exposed the peritoneum, and then by pressing upon the peritoneum by means of a probe, he made a kind of reef by suturing the peritoneum on one side of the probe to that on the other.

Medieval Methods: During the Middle Ages many new methods were introduced. Castration was still performed, though, according to William of Salicetus, only by travelling rupture curers and foolish physicians. Of the other methods the principal ones were:—

1. Exposure of the sac and closure by various forms of ligature.
2. Inclusion of the sac and scrotum either by needles or by sutures.
3. Cauterization applied in various ways.

The cure by cautery was known by Paulus, and was much employed by the Arabians. It continued in vogue almost to modern times. Full details of the method are found in the writings of Pott (Vol. II., p. 177), who thus describes it:—

"After a proper time spent in fasting and purging, the patient must be put into an erect posture, and by coughing or sneezing is to make the intestine project into the groin as much as possible, when the place and circumference of such projections are to be marked out in ink. Then the patient is placed on his back, the intestine is to be returned fairly into the belly, and a red hot cautery is applied according to the extent of the marked line. For this purpose cauteries of various sizes and shapes and figures have been devised."

Different writers differ widely as to the extent and depth of the cauterization, but, as Pott adds, "In all of these the exfoliation of the bone is made a necessary part of the process. Eschar and sloughs being separated and the exfoliation cast off, the patient is ordered to observe an extremely careful regimen, to lie on his back during the cure, and to wear a bandage for some time afterward, in order to prevent a new descent of the parts, which, notwithstanding all the pains and all the hazard the patient had undergone, he was still liable to."

Cauterization by means of strong acids, such as sulphuric nitric, were also employed.

It is not difficult to understand the dire results that not infrequently followed these methods, and which finally led to their abandonment.

Bordenhave (quoted by Lawrence) states that of three patients treated at one of the hospitals in Paris, one died, one relapsed and the third had a swelling of the spermatic cord. Peritonitis, gangrene of the scrotum and testis, and even perforation of the bowel, often formed part of the after history of these operations. During the eighteenth century, castration became so common, especially in France that finally stringent laws were passed condemning it. As an example, it is stated that the Bishop of St. Papoul found more than five hundred children had been castrated for hernia in his own diocese alone.

The celebrated "punctum aureum" was introduced by Geraldus of Metz. It consisted in exposing the sac and encircling it with a thread of gold in such a manner as not to include the cord.

Such, then, was the state of the radical cure of hernia at the beginning of the 19th century. We find an occasional return to ancient methods in the early part of the present century, notably by the Prussian surgeon, Schumaker, and the elder Langenbeck. They made an open incision and dissected the sac from the cord, then ligated it as high up as possible. Langenbeck stated that he had performed the operation twelve times with the most successful results. The method, however, did not meet with general approval, and does not seem to have been much employed.

With the introduction of subcutaneous surgery, Stromeyer, in 1835, there followed attempts to apply these principles to the cure of hernia. The most notable example of these operations were the method of Wutzer and Gerdy, and a little later the method of John Wood, of London, which was a combination of the open and subcutaneous methods. Woods' method was introduced in England in 1857, and even up to recent times was more generally employed than any other method, both in Europe and in America.

The best results were obtained by Wood himself, who claimed a large percentage of cures. The mortality of the method was about 7 per cent., though in his later series of cases this was reduced very considerably.

By modern methods we mean those that have been introduced, or, rather, reintroduced after the great discovery of Lister and Pasteur. It took some years for the principle of antiseptics to become sufficiently accepted and put into practice by the leading surgeons before serious attempts were made to apply them to the radical cure of hernia.

In the first place, a distinction should be made between operations for strangulated hernia and those deliberately undertaken for the purpose of effecting a radical cure. Strange as it may seem, the operation for strangulated hernia is of much more recent origin than that for non-strangulated hernia. Up to the seventh century taxis alone had been used for strangulation, and to Pierre Franco must be given the honor of

introducing herniotomy, 652 A.D. His minute description of the operation forms one of the bright spots in the surgery. Franco's method was later taken up by Ambroise Paré, and most strongly endorsed. Paré was the first surgeon, so far as we know, who advocated operation for all cases of strangulated hernia. His teaching, however, fell on barren ground, and it was not until two centuries later that herniotomy became generally adopted.

Up to the beginning of the nineteenth century it was practically unknown in America. In the life of J. C. Warren, Vol. I., p. 37, we find it stated that when he began to operate in Boston (about 1804) the operation for strangulated hernia was unknown. He had just returned from England, and attempted to put into practice what he had learned from his illustrious teacher, Sir Astley Cooper, but when he proposed to operate on a case of strangulated hernia, he was met with the greatest opposition both from the other physicians and from the friends of the patient. He finally gained consent to operate, but the long delay caused the death of the first two or three patients. Convinced that he was right, his genius and courage enabled him to go on, and the brilliant results of his later cases did much towards establishing the operation for strangulated hernia in America upon the solid foundation that it has ever since enjoyed. It does not appear, however, that any serious attempts were made to effect a radical cure until after the introduction of Lister's method of antiseptis.

Henry O. Marcy, of Boston, who had enjoyed the privilege of personal instruction under Lister in 1870, appears to have been the first to operate upon strangulated hernia under antiseptic methods, and to close the canal by means of absorbable buried sutures of catgut. On the 19th of February, 1871, he operated upon a woman aged 50 years for strangulated inguinal hernia, and closed the canal by "two stitches of medium-sized catgut directly through the pillars of the ring."

On March 10th, 1871, he operated upon a second case of strangulated hernia, also in a woman, and closed the canal "by three large-sized catgut sutures passed deeply through the pillars of the ring, and the wound carefully dressed antiseptically with Lister's carbolic plaster." (*Boston, Medical and Surgical Journal*, Nov. 16, 1871.)

The sac was not opened in either of these cases.

Dr. Marcy's first attempt to cure non-strangulated hernia by operation was February 4th, 1878, or several years subsequent to the operations of Steele, Annandale and Czerny. *Richard Steele, of London*, deserves the honor of first attempting to cure non-strangulated and inguinal hernia after the introduction of antiseptic methods, though he very modestly states that it seems such a natural proceeding, he does not doubt that others did it before him.

In the *British Medical Journal*, November 7th, 1874, p. 584, Steele reports his most interesting case. The patient was a boy eight years of age. He cut down upon the canal, exposed the pillars of the ring, pared their edges and united them with catgut sutures. The hernia recurred in six months, became strangulated, but was reduced by taxis. Steele then did a second operation, and the patient was well one year later. This case does not seem to have received the attention it deserved, and to Czerny is usually given the credit of being the author of modern operations. His first report of seven cases was published in *Wien. Med. Woch.*, No. 22, 1877, p. 527. His first patient was operated upon Jan. 1st, 1877, more than three years later than Steele's. The neck of the sac was ligated with catgut, and the pillars of the ring were sutured with catgut. The skin was closed with catgut, two drainage tubes were used, the wound healing over in 17 days. In the second and third cases the pillars were closed with catgut, and in the fourth and fifth cases with silk sutures.

It will be seen that Czerny's operation shows a distinct advance over the operation of Marcy and Steele, viz., he dissected out the sac and ligated it before suturing the canal. From the limited experience derived from his early cases, Czerny concluded the thousand-year-old problem of surgery was nearing solution. Of his first five cases, four suppurated and one died. The rapid improvement in method and teaching during the past two decades have proved the correctness of Czerny's observation.

Time will permit but the briefest references to the more important of the numerous methods devised since Czerny's first report. As early as 1819, Tilanus of Amsterdam had collected and reported before the International Medical Congress 122 cases in which operation was performed by supposedly antiseptic methods, and 79 of these cases were non-strangulated and 43 were strangulated. Too few cases had been traced sufficiently long to justify conclusions as to the permanence of the cure, and the immediate mortality of 6 per cent. made many physicians hesitate to advise and surgeons to perform the operation. The subject, however, was so fascinating and the goal was of such inestimable importance, that the minds of the leading surgeons of the world were engaged in attempting to modify the old methods or to devise new, with a view of diminishing the dangers and improving the final results. The methods at present in vogue are the result of somewhat rapid evolution in accordance with the law of survival of the fittest. Not one, but many workers in the field deserve lasting honor for the part they have played in conferring a priceless boon upon humanity. Among these names should be mentioned Steele, Annandale, Czerny, Marcy, Banks, Championnière, Macewen, Barker, Ball, Socin, Bassini, Bull, Weir, Halsted, and Kocher.

While many of the earlier methods have been superseded by newer

and better, we must not forget that the experience derived from the older methods have made it possible to discover their shortcomings and to devise appropriate remedies; therefore, let us not refuse them a place of honor. It would be tedious to enter into anything like a full description of the various methods mentioned, nor is it necessary. Many of them are no longer in use, having fulfilled their part and given place to better. There are still a number of methods in vogue, each of which is represented by its advocate as the ideal operation, and it is clearly our duty to study these carefully and attempt to discover, if possible, the best.

Macewen's method, first performed by its author in 1879, and introduced to the public by a most able paper ("Annals of Surgery," August, 1886), was largely employed by English and American surgeons, and even to-day has its warm supporters. The results in the hands of Macewen were almost ideal, but whether due to difficulty in learning the details of its technique, or to other causes, the same brilliant results were not attained by other surgeons. The step of the operation upon which the most stress was laid, viz., the infolding of the sac so as to form a barrier at the internal ring, was in itself a source of danger and difficulty, in certain cases. Sloughing of the poorly nourished sac and prolonged suppuration, ending in speedy relapse, were some of the results in less skilled hands than those of the author. And with the introduction or other methods, notably those of Bassini, it has gradually been given up. Whether the infolded sac remains for any length of time, and plays a really important part in preventing relapse, may well be doubted. In one case, in which the patient died several years after operation by Macewen's method, Lanenstein found the sac still folded up into a firm pad, which apparently closed the canal and aided in preventing a return of the hernia. In another similar case, observed by Bassini, in which the autopsy was made 95 days after operation, no trace of the folded sac could be found. We prefer to believe the excellent results obtained by Macewen were due not so much to the peculiar treatment of the sac, but to the very careful closure of the canal by chromicized catgut.

The same would hold true of Kocher's method, in which the sac is brought out through a cleft in the aponeurosis of the external oblique. He has already so modified his method that only a small portion of the sac is now left, instead of the whole or the larger portion.

There has been considerable dispute among those of the profession inclined to lay stress upon matters of priority as to whether the idea of transplanting the cord originated with Bassini, with Halsted or with Marey. A careful and an entirely unprejudiced study of the reported writings of all, would seem to show that the honor should rest with Bassini. Halsted, in March, 1893, in his most valuable paper describing his own method, and giving a report of 58 cases operated upon by

this method (Bull. *Johns Hopkins Bulletin*, Vol. IV., No. 22, p. 20), states that he had described his operation more than three years before (Bull. *Johns Hopkins Hosp. Bulletin*, Vol. I., No. 1), six or eight months before the publication of Bassini's paper (*Archiv.-Klin.-Chir.*, 1890), containing his report of 251 cases. Halsted was evidently not familiar with Bassini's first report of 102 cases made before the Congress of Italian Surgeons, in March, 1888, or two years before the date of his later and more complete report. An abstract of this early report and a description of Bassini's method was also published by Marcy in his book on the "Radical Cure of Hernia," in 1889, which also contained a description of Marcy's own operation.

The method of Marcy which differs materially from that of Bassini in most of the details of technique, has one important point in common with it, viz., the restoration of the obliquity of the inguinal canal. All of these surgeons have apparently worked out their ideas independently, and each deserves credit proportionate to the value of his own method of operation.

I wish the time permitted a full description of these methods, because their technique is not always understood by surgeons who attempt to perform them.

I have frequently seen cases come to the hospital for Ruptured and Crippled, less than eight weeks after operation by a so-called Bassini method, with well-marked relapse. A glance at the scar alone was sufficient to prove that Bassini's operation could not have been performed. One cannot properly perform the operation with an inch and a half to a two-inch incision, the upper extremity of which extends scarcely above the external ring.

Were I called upon to give what I believe to be the most frequent errors of technique, and those most responsible for failure to obtain good results, I would place, first, an incision of insufficient length, both in skin and aponeurosis (it should be at least three inches long), and placed too low down. Second, failure to dissect back the aponeurosis of the external oblique well over to the edge of the rectus muscle. Third, careless or unskilful dissection of the sac from the cord and the surrounding tissues, thus prolonging the operation and bruising the tissues, thereby lessening the chance of primary union. Fourth, too great tension upon the buried sutures, or the use of non-absorbable sutures.

The question of sutures I will discuss later.

I do not need to tell you that the essential feature wherein Halsted's method differs from Bassini's lies in the treatment of the cord and the closure of the canal. In Bassini's method, the canal is closed by suturing the internal oblique and transversalis to the shelving portion of Poupart's ligament, (which must always be very clearly exposed), the

aponeurosis being carefully retracted on either side during this suturing. The rent in the aponeurosis is then closed from above, downward, as before, by means of a continuous suture ; until at the lower angle, just enough space is left to permit the cord to pass without undue compression.

In Halsted's method, on the other hand, the cord is transplaced more externally, so that it lies just beneath the skin and superficial fascia. The aponeurosis with the underlying muscles and transversalis fascia, on the one side being united to the transversalis fascia, Poupart's ligament and the aponeurosis on the other, by means of a single row of five or six mattress sutures. One sees at once that if the cord were left in its normal proportions, there would be great danger of relapse at the point where it emerges. To lessen this danger it was ingeniously proposed to remove "all but one or two of the veins of the cord." Whether or not such a procedure might not cause atrophy of the testis was a matter that experience alone could determine. The subsequent history of Halsted's own case, as well as those of other observers, have proven that this result not infrequently occurs.

From a recent, and as yet unpublished, report of the results at the Johns Hopkins Hospital, Dr. Bloodgood has very kindly given me some very interesting and valuable statistics.

Of 109 cases operated upon by Halsted's typical method, with excision of the veins, there was no relapse, while in 86 cases operated upon by the same method, with the single exception that the veins were not excised, there were eight relapses, or 9 per cent. ; 56 of these cases were observed from one to nine years. Bloodgood concludes that Halsted's operation with excision of the veins will give perfect results if primary union be secured, though he admits that excision of the veins is liable to be followed by atrophy of the testis, and is, therefore, not always to be recommended.

He would not excise the veins in children or in cases in which the cord had been subjected to traumatism during the dissection of the sac. The number of cases in which atrophy of the testis followed excision of the veins is not noted, but it is stated that it was only observed in those cases complicated by epididymitis. Bloodgood therefore reasons that as the probabilities of epididymitis would be much less after excision of the veins, if the vas and its immediate vessels are not displaced, it would be as well to leave the remainder of the cord undisturbed, and he goes on to say that "the cord reduced to such diminutive size will be as little likely to be the cause of a recurrence in the lower angle of the wound as in the upper angle when it is transplanted."

This is practically an admission that one of the leading features of the method, viz., the excision of the veins, is not always free from risk, and

that another, and perhaps the most important, the transplanting of the cord is unnecessary if the veins are excised.

There is another point in which Halsted's method differs from Bassini's, which, though seldom mentioned, is, I believe, one of great importance, and that is, the free division of the internal oblique muscle, transversalis muscles and transversalis fascia, or, in other words, the entire floor of the canal as well as the roof. The free division of the internal oblique has, I think, nothing to recommend it, and since gentle stretching of the fibres and pushing them upwards will always permit of the sac being excised well beyond the neck, it would seem unnecessary.

We are willing to grant that the union of divided muscular tissue should be firmer than the union of fascia, but undivided muscle should be firmer still.

In the event of failure to secure primary union the dangers of relapse are greatly increased, if these deep structures have been divided and the relapse, if it does occur will almost surely be more serious in character and more difficult to treat. After all, that may be said on either side in the way of theoretical considerations, the question of preference must be finally settled by practical results. If the results of several different methods are the same, that method which is the simpler in technique should have the preference.

While Halsted's method in his own hands and in the hands of his skilful colleagues at the Johns Hopkins Hospital has yielded most brilliant results, they are not equal to Bassini's personal results.

Looking at the results of other surgeons, we find a much greater difference in favor of Bassini's method. The technique is far simpler, and we believe the rapidly increasing favor with which it is regarded both in Europe and America shows that it is destined in the near future to supplant all other methods.

It is hard for us to realize that the radical cure of hernia has made such tremendous advances in a single decade. In 1890, Bull, who had faithfully tried the best of the methods then in vogue, and on a larger scale than any surgeon in America (in one hundred and thirty-four cases), was obliged to confess that his "observations go to strengthen the conviction that all methods of radical cure will be found unsatisfactory." He did not, however, discourage further efforts to improve upon these methods of operation, but merely wished to depict the situation as it actually was. He was one of the first to subject operations for radical cure to critical tests and to point out that the term "cure" could not rightly be applied to patients who had merely recovered from operations, and had not been observed for a considerable period afterwards. To show how rapidly advances have come in this field of surgery, the ink was scarcely dry upon the valuable but gloomy paper of Bull, when

Bassini's brilliant report of 251 cases, operated upon with but a single death, and all but four cases traced from a few months to four and a half years, with but seven relapses, appeared. Whether or not these same good results were possible in the hands of other surgeons remained for the succeeding years to tell. Nearly a decade has now passed, and few surgeons, and still fewer physicians, realize the tremendous revolution that has occurred in the operative treatment of hernia. Instead of an operation with a mortality of six per cent., alone sufficient to make the conservative surgeon hesitate to recommend it, except in cases of urgent need, and with at least a third, or more nearly, a half of the cases relapsing within a comparatively short time, what is the situation to-day? We find the mortality of leading operations reduced to less than one per cent., and the final results in large series of cases carefully traced, show almost entire freedom from relapse. Instead of 30 to 50 per cent. followed by suppuration, we find 5 to 10 per cent. If you will pardon a reference to personal work, which is given merely to show what any one may accomplish, provided he gives the proper attention to the technique of the operation, I will here give a very brief abstract of my most recent statistics. Since August, 1891, I have operated upon 639 cases of hernia, with but one death, due to pneumonia. Of these cases 585 were inguinal, 40 femoral, 14 umbilical and ventral. Of this number, all except 60 cases have been traced. 549 cases of inguinal hernia were operated upon by Bassini's method (with five relapses), with kangaroo tendon for the buried sutures. Of this number, 493 cases have been traced, as follows: 4 cases were sound upwards of 7 years; 4 cases, 6 to 7 years; 9 cases, 5 to 6 years; 19 cases, 4 to 5 years; 69 cases, 3 to 4 years; 91 cases, 2 to 3 years; 132 cases, 1 to 2 years; 101 cases, 6 months to one year; and the remainder less than 6 months. In regard to wound healing, 96 per cent. of the cases operated upon by Bassini's method healed by primary union. No truss is used after operation.

The only points in which I have departed from the original technique laid down by Bassini have been in: First, the substitution of chromicized kangaroo tendon for silk in the buried sutures. I have recently been told by a former assistant of Bassini's that Bassini himself has used chromicized catgut instead of silk since 1892. Second, the introduction of a suture just above the cord, and passing through the same structures as those below the cord, with a view of preventing any further separation of the tissues above the new internal ring, and keeping the cord restricted to narrower limits. That these slight changes, too trivial to be called modifications, have been of advantage, the results in my series of cases would seem to prove.

Among the many questions of importance in connection with the subject of radical cure of hernia that are still unsettled, is the question of the best suture material. Silk, silver wire, catgut, kangaroo tendon, silk

worm gut, each one has had its ardent supporters. Were the question of less importance, I should not attempt to discuss it at this time. Like the choice of operative methods, this question also must finally be settled by the careful observations based upon large experience and theoretical considerations must again be placed in the background. Silk was probably used by the ancients. Catgut, introduced by Lister, was probably also first used by Lister to close a hernial wound. In the address in surgery before the British Medical Association (*British Medical Journal*, August 26, 1871, Vol. II., p. 231), Lister reported two cases of irreducible ventral and umbilical hernia upon which he had operated by opening the sac, freeing the adhesion, reducing the contents, and finally closing the freshened edges by means of closely applied interrupted sutures of prepared catgut. The dates of the operations are not stated, hence it is possible that Marey's cases of strangulated inguinal hernia, operated upon in February and March, 1871, and reported in *Boston Medical and Surgical Journal*, November 16th, 1871, were really the first cases of hernia in which the burned catgut suture was used.

Czerny used catgut in his earlier cases, but later, owing to the difficulty in rendering it completely sterile, substituted silk.

Mitchell Banks, whose name must always be mentioned foremost among the pioneers in operation for the cure of hernia, states (*British Medical Journal*, Nov. 18th, 1882) that the only point of novelty he could claim in the operation which he successfully performed was in the substitution of silver wire for catgut. He closed the external ring with two or three buried sutures of stout silver wire. Macewen modified the simple catgut suture by chromicizing the gut sufficiently to maintain it in the tissue three or four weeks before absorption took place.

This was a most important modification, and the suture of chromicized catgut is still to-day, we believe, with the possible exception of kangaroo tendon, the best suture for hernia operations. Shortly after 1890, silk worm gut was introduced as the ideal buried suture for hernia operation, and for a time it was largely used in operations for hernia, especially in the United States. Marey, who used catgut in his early operations, later substituted kangaroo tendon, obtaining his first supply of tendon from Australia in 1882. The advantages of kangaroo tendon over catgut seems to have been first recognized by Dr. T. M. Girdlestone, Lecturer on Surgery, at the University of Melbourne. As early as 1877 he brought it to the notice of the Medical Society of Victoria, and in November, 1881, through Sir Thomas Smith, of London, he addressed a communication to the Medico-Chirurgical Society of London. In this paper (*Transactions of Medico-Chirurgical Society*, 1882) he states that the tendon suture resisted the softening influence of the tissues much longer than catgut. He prepared it according to Lister's method of preparing catgut, in carbolic oil, but also stated that, if desired, it could be further

hardened by putting it in chromic acid, one-half per cent. solution, for seven hours. It has been largely due to the writings of Marcy that it has come to be used so largely in operations for hernia. I have personally employed it in upwards of 600 operations for hernia, and I regard it as practically an ideal suture. The only difficulty has been in securing tendons of the proper size. If too large, they remain in the tissues too long for absorption, and thus are open to the same objections that hold true of non-absorbable sutures. Split tendons should never be used, as they are lacking in strength, and are of uneven calibre. Girdlestone himself in 1881 pointed out this fact. Some judgment is needed in selecting the proper size. I prefer for the deeper sutures a tendon equal in size to a number two or number three catgut, while a tendon the size of a number one catgut or even smaller will suffice for the closure of the aponeurosis. The cost of the tendons and the difficulty of obtaining tendons of suitable size and strength are objections of some weight. I am not sure that a carefully prepared and properly chromicized catgut will not prove nearly, if not quite, as good a suture for hernia as kangaroo tendon, and this is fortunate, inasmuch as the supply of tendons is likely to prove insufficient to meet a largely increased demand.

Halsted used silk in his earlier operations, but during the past three or four years has used only silver wire. We are somewhat surprised at this change, for in his first paper, 1893, describing his method of operation, he speaks of silver wire as follows: "The use of powerful sewing materials in surgery is, it seems to me, based upon a misapprehension of pathology. If, for example, the tension is so great that wire must be used to bring the parts together, one must not expect permanent assistance from the wire, for the stitches will eventually be cut through to the extent necessary to relieve the tension." This is a concise and admirable statement of the question, and we prefer to believe it still true. The real and important objection to silk, silver wire and the whole list of non-absorbable sutures remains to be noted, and this is their liability to cause sinuses long periods after operation. This objection is not theoretical but based upon personal observation of twenty-seven patients at the Hospital for Ruptured and Crippled, as well as upon numerous reports of other observers.

In every one of these cases a sinus developed at varying periods from a few months to three years and eight months after operation. This condition of sinus formation is a serious one, inasmuch as the healing of the sinuses often require many months, and seldom become permanent until the last of the offending sutures has been removed. This is not the end, for the prolonged suppuration has in most cases so weakened the canal that relapse usually follows. Thus what might have been a successful operation for the radical cure of a hernia has become a complete failure owing solely to the use of a non-absorbable suture. The

reasons formerly advanced by surgeons for using non-absorbable sutures were that catgut and tendon could not be satisfactorily sterilized, but with our improved methods of sterilization such reasons no longer obtain. A comparison of the statistics as regards wound healing of the surgeons who use catgut and those who use non-absorbable sutures will disprove the validity of such claims.

Primary wound healing was obtained in but 80 per cent. of Halsted's series of cases in which silk was used for the buried sutures, and his later statistics of 261 cases in which silk, silver wire and silk worm gut were used, 31 suppurred, or 11 per cent. These patients, we must remember, were operated upon at a hospital which enjoyed a reputation above all others for the perfection of its aseptic technique. Yet the statistics of other surgeons under much less favorable operative conditions, who have used absorbable buried sutures show better results as regards primary wound healing. I mention these facts simply to show that the claim, that non-absorbable sutures are necessary to obtain the best results in primary wound healing, is entirely unfounded; therefore, there is no logical reason why the final results of the operation should be jeopardized by their use.

With the vast improvement that has taken place during the past decade in methods and results of operations for radical cure, the indications for operation have markedly increased, though in some respects the present views as to selection of cases for operation differ materially from those held ten years ago. At that time operations were almost entirely confined to adults. This was due to the fact that some regarded the operation as more dangerous in children, and others believed that all ruptures in children could be cured by mechanical means. We now know that both these suppositions are erroneous. The results of large series of operations in children proving that the operation is less dangerous in children than in adults, and a careful study of the after history of a very large number of cases of hernia in children having proved that, at least one-third of all children starting with hernia in childhood, pass on into adult life with the hernia uncured by mechanical means.

This does not warrant us in advising operation in all cases of hernia in children. At the Hospital for Ruptured and Crippled in New York, we have adopted the following rules in the selection of cases, and it will be seen at once that these are fairly conservative.

Operation is advised (1) in children over four years of age in whom a truss has been given a fair trial without marked improvement.

(2) In cases complicated with fluid in the hernial sac (reducible hydrocele); in all cases of femoral hernia, since this form of hernia offers little or no hope of cure through mechanical treatment.

The practice of operating upon infants under one year of age or even two or three years is, I believe, open to serious criticism.

Umbilical hernia in infants and children should, with some exceptions, never be operated upon, for the reason that these are almost invariably cured by other means. With regard to adults, it is not longer considered advisable to operate upon the very large and long irreducible hernia in patients beyond middle life. The operation is attended with grave risks, and a speedy return of the hernia will almost certainly occur. The same is true of the large irreducible umbilical herniæ especially common in very stout women. While we cannot hope to cure such patients by operation, we should bear in mind that there was once a time when every one of these cases could have been operated on with a fair prospect of success, hence the importance of operating early.

Inasmuch as there is slight prospect of a cure being effected by a truss after the age of 20 years, we can now advise operation in such cases,¹ especially since it is no longer attended with appreciable risk, and the prospect of a permanent cure is very great.

Operation would seldom be advised in patients over sixty years of age.

Inguinal hernia in the female has thus far received but little attention. and yet this variety of hernia yields the best results of all under operative treatment. Championnière was, I believe, the first to urge operation in these cases, and he has recently reported 49 cases. His method was to excise the round ligament along with the sac, but I believe this to be not without objection, and, moreover, entirely unnecessary. The case can in every case be dissected free from the ligament, with a little care and patience.

Kelly (Operative Gynæcology, Vol. II., p. 481), of Baltimore, transplants the round ligament exactly as Halsted transplants the cord as in inguinal hernia in the male, and closes the wound by Halsted's method. During the past eight years I have operated upon 100 cases of inguinal hernia in the female, and although the cases have been most carefully traced, not a single relapse has been observed. The method employed was precisely similar to Bassini's operation in the male, with the transplantation of the cord omitted, the sac, having been carefully dissected from the round ligament well beyond the internal ring, is then tied off and excised. The round ligament is then allowed to drop down into the lower angle of the wound, and the wound is then closed in two layers of buried sutures, according to Bassini's technique. The operation is much simpler than the one performed by Kelly, and the results thus far obtained have been perfect.

Time will permit of but the briefest reference to the radical cure of femoral hernia. It is not generally recognized by the profession that the results of operation for femoral hernia are even more successful than for inguinal. Although a great variety of methods, many of them complex in technique and difficult to perform, have been proposed, the simple methods have been found to give the most satisfactory results.

Bassini has reported fifty-four cases (*Archiv. für Klin.*, 1894) operated upon by his own method without mortality, and 41 of these were traced from one to nine years without a single relapse. Of my own cases, 40 in number, Bassini's method was employed in sixteen and the method of high ligation and incision of the sac, with closure of the femoral canal by means of a purse string suture of kangaroo tendons, was used in the remainder.

The single relapse observed occurred in a patient operated upon by Bassini's method, and it is worthy of note that this was the only case in which there was failure to secure primary union.

It would not be right to close this brief and very imperfect sketch, without saying a few words upon the final results of operations for hernia, in other words, upon the permanency of the cure. Do operations, even according to the best methods, and skillfully performed, really cure the patient, or is he only temporarily relieved? The answer to the question must as yet be more or less tentative. If by a permanent cure we mean freedom from relapse, as long as the patient lives, then, of course, the time has as yet been too short for us to make dogmatic statements.

Fortunately, however, we already possess sufficient data to enable us to draw fairly accurate conclusions. The careful study of 361 cases of relapse following various operations for inguinal and femoral hernia observed at the Hospital for Ruptured and Crippled during the past ten years, shows the important fact that the great majority of relapses occur within the first few months after operation; 61.5 per cent. occurred during the first six months; and 80 per cent. during the first year: between one and two years after operation, 8.89 per cent. relapsed.

From these facts we are justified in concluding that in cases well beyond one year the chances of recurrence are very slight, though in some cases relapse has been noted twenty years after operation. Under the methods practised a decade ago the percentages of relapses, even during the first two years, ranged between 30 and 40 per cent. Under the improved method now in use, especially Bassini's, and even with a much more careful tracing of patients, this percentage has been reduced to a minimum.

Such, then, at the dawn of the twentieth century, is the present status of the radical cure of hernia. "The thousand-year-old problem of Surgery" has finally been solved in the last quarter of the nineteenth century by the happy combination of genius, rare skill, and unflagging perseverance on the part of many workers in many lands. We must not forget that this combination would have been of little avail without the brilliant discoveries of Morton and Lister. So that here again in the radical cure of hernia we find new cause to do them honor and to add to their laurels.

ENTEROPTOSIS AND ITS RELATION TO FUNCTIONAL DISTURBANCES.

BY

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The condition described by the term Enteroptosis has been attracting an increasing degree of attention during the past few years. Some years before Glénard's monograph appeared, Virchow, Leube and others described the anomalous downward displacement of different abdominal organs, but in 1885 Glénard formulated his views upon this subject, accurately describing the condition of the abdominal viscera and the nervous phenomena connected therewith. Among the features prominent in this symptom-group which Treves is pleased to call "that medley of symptoms," are, downward displacement of the stomach, a movable right kidney, various digestive disturbances and often very typical neurasthenic symptoms. So sanguine was the pioneer observer among the French, and indeed among all writers, that he had discovered a solution to the difficult problem of many cases of neurasthenia, that he says at the close of one of his very early monographs upon the subject in a free translation as follows :—"I can affirm that the physician who will follow my directions and strive to verify my statements in such cases will find in his practice the satisfaction which a positive diagnosis gives to both physician and patient from which alone a proper prognosis can be made, and that satisfaction, the greatest of all, which directs the treatment and avoids for the patient the trial upon him of so many remedies, while at the same time it secures him relief and prevents the physician himself from falling into therapeutic scepticism."

The next step of importance in the advancement of our knowledge on this subject is marked by the appearance of Ewald's writings in 1890, and those of Pick, Boas, Kumpf, and Hufschmidt in 1892. With Ewald many of the Germans took sides against the French school on several points to which we may refer later. The German school claims that Glénard had reference but to the intestines in his descriptions, while, associated with ptosis of these parts, displacement of other organs was common. By the German school, the application of this term is broadened and more comprehensive. Schwerdt believes he is justified in speaking of enteroptosis when at least two organs are found prolapsed.

It may be mentioned here, however, that Ewald's methods of investigation were more accurate than those of Glénard—for while it appears the latter did not employ any means of inflating the stomach or intestines, Ewald claimed that such was a necessity and thus by Glénard's method of diagnosis, mistakes were likely to creep in.

Treves, in England, has contributed to the study of the symptomatology and treatment of this disease, while Osler was the first in America to include this subject in a text-book in 1892.

Glénard's disease or Enteroptosis or Splanchnoptosis, as it may be called, according to Stiller's suggestion, should be considered independently of those conditions of visceral displacement resulting from former inflammatory process, such as frequently occur about the genital organs, of females and result in pulling down portions of intestine or an isolated organ. This view, however, is open to the criticism, that, upon the normal position of any one organ the position of the others largely depends, and it is possible to have very general ptosis result from such a cause associated with all those signs incident to the true disease. It is acknowledged, however, that in a large number of such instances the signs of the true disease are not prominent in the clinical picture and may be absent entirely.

Meinert urges that the prominent pendulous abdomen resulting from numerous pregnancies "has nothing whatever to do with Glénard's disease. Such an abdomen holds a dilated stomach, not a dislocated one." However conflicting these views may be concerning the classification of cases under this head, it may be accepted as safe teaching, at least for the present, that (I.) Enteroptosis may exist without subjective signs, that (II.) the Enteroptosis of Glénard is associated with the most pronounced subjective signs, chiefly of a neurasthenic type, that (III.) in those cases where a pendulous abdomen is present the nervous features of the case are less pronounced than in thin subjects with greatly flattened belly walls, and that (IV.) Enteroptosis arising from inflammatory processes in the abdomen may be typically characteristic.—(Treves).

The view of Mathieu is thus expressed, that Enteroptosis is of two varieties, (I.) the form which shows itself plainly from without by a pendulous abdomen and is rarely found associated with nervous manifestations. The second form (II.) is that in which the abdomen is thin and flat and where the neurotic element is very prominent,—the internal variety.

The organs displaced in this disease may be all those found below the diaphragm. Most frequently, however, the colon and small intestines, the stomach, the right kidney and the liver are found in altered relations. It is not rare to find the left kidney also displaced: the spleen

very rarely is found away from its normal position while the pancreas has been once recorded as dragged down (Rokitansky, Treves).

About the subject of the Etiology of Enteroptosis much interest centres and numerous theories have been advanced to account for its occurrence. Kuttner and Dyer affirm that no cases of congenital gastroptosis have been observed. Stiller (1896) says that Enteroptosis is a congenital anomaly. It occurs in those whose muscles are soft, whose bony organisation is delicate and upon them but a small deposit of fat may be found. There is usually found in such patients a floating tenth rib.

Enteroptosis is found in men as well as in women, although much less frequently. Two of the cases herewith reported were male patients, although the percentage of men is much smaller in a large series of cases as shewn by Glénard, Meinert, Schwerdt and indeed by all observers. The French writer reports 404 cases, 306 of which were among women; in Meinert's series, 88—90 per cent. were females, while in Schwerdt's series of 95 observations, 89 were in women. Pregnancies and tight lacing are the chief causes, according to Manges, for this great difference between the sexes.

In answering the question as to the etiology of the condition, Dr. Schwerdt, of Gotha, states that the essence of this disease is to be sought for in an atony of the whole nervous system which affects the muscles of the whole body. As active causes of such a condition he enumerates heredity, unhealthful methods of living and working, all chronic diseases, the wearing of corsets and lack of care in the pregnant state and in childhood. He regards this disease as a *constitutional ailment*.

The abdominal organs are kept in place very largely by a certain degree of intra-abdominal pressure, and when this is greatly diminished, ptosis is the result. The corset contributes to this condition, among other ways (I.) by diminishing the tone of the body walls and suspensory ligaments of the organs, and (II.) by interfering with the mechanical and chemical functions of digestion thus impairing nutrition. The teaching of Schwerdt upon this point is more theoretical than that of Meinert, who regards the corset as a means of altering the relation of the parts chiefly by direct pressure.

There is doubtless no one cause or group of causes which will suffice to explain the occurrence of this disease or condition. We may conclude then that :—

1. The intra-abdominal pressure is altered.
2. Many causes contribute to this end.
3. The organs may be displaced by being pulled down.
4. In all probability a congenital predisposition exists in the con-

firmity of thorax and the character of fibre entering into the supporting tissues of the organs.

The *diagnosis* of Enteroptosis, since the adoption of the method recommended by Ewald and others, is a matter of comparative simplicity. On the inspection, the contour of the abdomen may suggest a condition of Splanchnoptosis. The epigastrium is hollowed, the two lower quadrants of the abdomen, even with the patient in a recumbent position, are often quite prominent—while, as pointed out by Dr. J. C. Webster in a personal observation, the recti abdominis may be seen widely separated in thin subjects when attempting to assume an erect position. In a few cases I have seen the position of a displaced stomach indicated by the peristaltic waves extending from left to right. It is necessary, however, to distinguish between a displaced and dilated stomach. In brief, we may say that it is all important to determine :—

1st. the position of the lesser curvature of the stomach.

2nd. the relation of the greater curvature to the lesser.

In all cases where one can demonstrate the lesser curvature some degree of displacement exists, and in proportion as the lesser curvature approaches the umbilicus or falls below it, so is the degree of displacement. Dilatation, as the result of atony, is a usual accompaniment of gastropstosis and a transverse measurement of from four to five and a half inches might still be within normal limits, and would not indicate dilatation.

The hypogastrium may present a dull note from the close prolapse of the small intestine. A point upon which Glénard laid great stress is termed by him “*la corde colique transverse*,”—by this he described a small band which ran horizontally across the abdomen about two inches or so above the umbilicus. He regarded this transverse band as the “*colon transversum*.” Upon this point there is much diversity of opinion. The German teachers, led by Ewald, claim that the French teaching is wrong and that the “*corde colique transverse*” was the pancreas. According to Friekhinger, who saw the intestine of a patient with Enteroptosis inflated by Ziemsen, it is regarded as the transverse colon, the hard cord, during the process, becoming changed into a cushion-like and elastic body. On the other hand Ewald cites a case reported by Krez in which an autopsy was done and the “*corde colique transverse*” was apparently the pancreas. In Case No. 3 (Mrs. M.), the “*corde colique transverse*” was plainly felt and during a laparotomy done upon this patient, it was shown to be the pancreas.

Palpation of the abdomen usually reveals movable kidney, methods of examination for which are known to all. The liver, when displaced, is usually more prominent in the epigastrium and may be rotated upon its longest axis, the upper line of dulness falling much below normal.

Another point upon which Glénard laid special stress, as one of diagnostic worth, and which is to be applied in all cases of Enteroptosis he described under the phrase "*l'épreuve de sangle*." This test is applied by the examiner, standing behind the patient who also is in the erect position, and with both hands laid flatly over the lower zone of the abdomen, a firm but gentle pressure is made upwards. In the great majority of cases this affords considerable relief to the distressing dragging pain which is felt in the epigastrium and abdomen and which is one of the patient's chief complaints. At the same time the result of this test is an index to treatment.

As illustrative of many of the above points in diagnosis, the following cases may be briefly described. With two exceptions they are from personal observation, and for these two I am greatly indebted to Dr. James Bell and Dr. C. F. Martin.

Case No. 1, C., male, æt. 25, admitted June, 1899. Complaints were of pain in right side of abdomen, loss of weight, jaundice and of recurrent attacks of indigestion. In February, 1898, the patient had his first attack of severe colic, which was referred to the liver—and regarded as hepatic colic. During the past ten years he had frequent pain in the region of stomach, especially marked after walking, standing or riding. These attacks were brief and on two occasions were followed by jaundice. After the attack above referred to (February, 1898), the patient was comparatively well for about a year with the exception of slight "indigestion" and a dull heavy feeling at times.

In January, 1899, another attack similar to the first occurred and since then, every two or three weeks, this has been repeated, although each attack was of a much milder type. The jaundice was associated with clay-colored or "colorless stools and high colored urine and he remarked that on several occasions when the attack of abdominal pain was passing off the urine, which had been scanty, became more copious and light colored. The loss of weight was about thirty-three pounds. The patient was of a constipated habit. Quietness in bed relieved both constipation and abdominal distress.

The patient is tall and slender, somewhat nervous in temperament; the abdomen is flat, the right kidney is freely movable and the stomach is displaced as shown in the drawing made from the gastrodiaaphane; the corde colique transverse is faintly palpable. (See Fig. 1.)

Case No. 2. Mrs. G., æt. 66 (Hospital No. . .). Complaint of pain in stomach. The patient says that during the past twelve years she has been subject to abdominal pain coming on about two hours after food and lasting for three or four hours. These attacks have recurred at intervals varying from three or four months to one or two weeks. Great care has been necessary with her diet in order to avoid an attack. She

is the subject of flatulence and constipation during these attacks. The pain has been felt chiefly in the epigastrium but extends around the back on the right side. She had never been jaundiced before coming under observation and there is no history of over-indulgence in food or drink or past stomach disorder, but she has partaken freely of condiments.

Her condition was one of emaciation, muscles, small and flabby; mental state was irritable; the circulatory and respiratory systems were negative. On examination of the abdomen one observed that it was thin-walled and very lax. There was the epigastric depression extending down to the umbilical level, below which fulness was manifest. The spleen and liver were not palpable, while both kidneys might be readily felt. Inflation of the stomach and illumination of the same were confirmatory and showed marked displacement downwards and to the right with no dilatation as shewn by the diagram (Fig. 2). The lesser curvature was just above the umbilicus. A test breakfast showed no hydrochloric acid and no lactic acid. The patient was under treatment for some days in the hospital upon a fairly liberal diet of gruel, sweetbreads, fish, toast and tea, somatose, and koumiss. Faradism was also applied to the stomach. While under observation a severe attack of abdominal pain supervened and on the following day the patient was markedly jaundiced with bile in the urine. The degree of jaundice diminished to deepen again only after another attack of pain.

This case illustrates the following points :—(I.) Marked digestive disturbances for years ; (II.) Nervous irritability ; (III.) Constipation ; (IV.) Epigastric pain followed by jaundice.

Case No. 3. Mrs. M. A. M., æt. 36. (Hospital Nos. 1,024, 4,029.) This patient complained of "disease of the liver, kidney and bladder." For years she had suffered with pain in right hypochondrium: she had had no acute illness; she had borne two children, both of whom died in infancy: one year previous to her admission to the hospital she suffered from severe abdominal pain which was referred to the right flank and was attended by "swelling and tenderness over the part." This attack was but temporary and fully subsided. Since that time, however, she has had occasional vomiting and felt chilly sensations.

Present condition :—One was struck with the expression constantly present on this patient's face. It was one of anxiety and distress; she was of a dark complexion, thin and hollow-eyed, and I remember well when going about the wards for the first time after she came into the hospital. She presented the striking picture of a neurasthenic patient. Discovering neurasthenia written so plainly on the face of this patient, I immediately examined the digestive system and abdomen with the gratifying result herewith given in detail. Her tongue was

flabby, teeth poor and appetite capricious. She was often troubled with flatulence, the bowels were constipated, the abdomen was flat and flaccid. Some general hyperæsthesia was present, but especially manifest over the right hypochondrium and hypogastrium; the epigastrium was flat and hollowed, the lower abdominal zone, if anything different, was comparatively prominent; on deep inspiratory movements one noticed in the epigastrium and extending across this area, a wave passing from above downward to a point about two inches above the umbilicus and one could feel a rounded body quite superficially. The right kidney was readily palpable and moved freely on inspiration and could be pushed up under the ribs.

The usual method of locating the stomach was resorted to and it was found, as in the diagram (Fig. 3) markedly displaced. The pelvic organs were normal.

Case No. 4. Mrs. L. C., æt. 38. (Hospital No. 6,515.) Admitted June, 1897. Patient complained of gastric distress constantly present, constipation, aching back and palpitation of heart. The patient believes her present illness began three years before and during the past few months it had been greatly aggravated. Although always of a highly neurotic nature, she had been specially so during the past three years. In March, 1897, her menstruation ceased. Gastric distress, flatulence, pyrosis and constipation describe her digestive disturbances.

Present condition:—The patient's nutrition was only fair as she showed signs of emaciation; her facial expression was troubled and she was decidedly neurotic. Anxious introspection characterised her mental state. Vasomotor instability manifested in visible flushing of her face and body, was a feature of her case. There were no stigmata of hysteria. The respiratory and circulatory organs showed no signs of disease. The generative organs were not diseased; she had a left inguinal hernia. The abdomen was very lax with tenderness on pressure about two inches below ensiform cartilage; the liver and spleen were not displaced. The right kidney was palpable and movable to a slight extent. The chief interest centres upon the stomach. A test breakfast was given but no contents could be gained thereafter. Gastric inflation revealed downward displacement of the stomach, the greater curvature presented three inches above the symphysis pubis, the lesser curvature was seven inches above this point, thus showing a transverse measurement of the stomach of four inches (Fig. 4).

Remarks :—These two cases, Nos. 3 and 4, illustrate in the most striking manner the neurasthenic symptoms associated with this condition of the abdominal organs; the facial aspect, the complaints, the introspection, the self-observation and the results of treatment were typical. In No. 3 treatment consisted first in nephrorraphy which

availed nothing. The "corde colique transverse" was well marked in this case and was misleading, inasmuch as it was movable and associated with loss of flesh and the absence of free hydrochloric acid in the stomach contents after the test breakfast. It was strongly suggestive of malignant disease of the stomach, but an exploratory incision showed it to be the pancreas. The wound healed but the patient was not improved.

The treatment in Case No. 4 was more satisfactory, although no operation was done, under massage (general and local), suggestion and reassurance, tonics and mild aperients and the wearing of a bandage, much improvement was made and though she has not continued as well as ever, yet she is leading a fairly active life in comparative comfort.

Case No. 5. Mde. St. D., æt. 48. (Hospital No. 6,504.) Complaints were of pain in loins and a feeling of weight and distress in upper abdominal zone which was worse on the *left* side. The patient had borne thirteen children, and at the second pregnancy twins were born. Ever since this event the abdomen has been prominent and flabby. During the past twelve years flatulence had frequently troubled her; during the past five or six years vertical headaches and distress in upper part of abdomen were complained of. While always nervous she has become much more so during the past few years.

Examination of the abdomen showed it to be one of "*hängebauch*," the walls were very flaccid and pendulous, the recti abdominis were widely separated and between these muscles one could readily feel the prolapsed contents of the abdomen. On examination of the different organs of the abdomen one found the normal area of liver dulness a resonant one. This organ was movable and could, at times, be easily felt between the recti; again it was with difficulty made out, possibly becoming rotated upon its transverse and longest axis. The left kidney was felt on deep inspiration, while the spleen and the right kidney could not be felt. The stomach, on inflation, was dislocated downwards, while the measurement of the organ when distended with gas indicated some degree of dilation as well. The lesser curvature was three inches above the umbilicus, the greater four inches below this, giving the transverse measurement of the stomach as seven inches. (Fig. 5.)

This case illustrates a ptosis of the liver with gastropptosis occurring in a woman with a multiple of pregnancies and in whom the recti were widely separated, the stomach dilated and nervous symptoms manifestly exaggerated.

Case No. 6. Mrs. K., æt. 40. (Out patient.) Showed displaced stomach, freely movable and tender right kidney, with occasional vomiting; epigastric pain and tenderness with pulsating area on the left of the middle line; some frequency of micturition. *L'Épreuve de Sangle* was most satisfactory in her case, and the wearing of an abdominal support was found very helpful. (Fig. 6.)

Returning now to the second part of our subject, we may say that the chief functional disturbances to which Enteroptosis is related are :—

1. Neurasthenia, including digestive disturbances.
2. Anæmia.
3. Constipation.
4. Jaundice.
5. Gastric dilatation.
6. Myxœdema, Scleroderma and Exophthalmic Goitre.

The theories concerning the symptoms associated in most instances with the altered position of the abdominal organs are numerous, but for convenience of consideration we may classify them under three headings :—

- 1st. There is the mechanical theory from Glénard.
- 2nd. What may be termed the neuro-mechanical theory of Meinert.
- 3rd. The neuro-intoxication theory of Schwerdt.

The first theory, although not purely a mechanical one, is chiefly such. It does not ask for any antecedent nervous cause, but it implies a weakness of the suspensory ligaments of the transverse colon, especially the colico-hepatic ligament. The descent, Glénard claims, begins at the hepatic flexure and the other events incident to the disease follow, viz.:—The entero-stenosis due to a kinking of the colon at the point of prolapse, the *corde colique transverse*, the gastropotosis, the constipation, the auto-intoxication, the neurotic manifestations, etc.

The second theory, which we may characterise as the neuro-mechanical one, is advanced by Meinert ; in short, Meinert attributes the symptoms associated with “dropping of the viscera” to the constant stimulation and irritation of the sympathetic nerves, as a result of pulling and stretching of these nerve fibres. This has its deteriorating effect upon the blood, through the blood-forming organs, and the general nervous system, and hence chlorosis, neurosis and all sorts of vasomotor disturbances.

The third theory is that of Schwerdt already alluded to in speaking of the etiology of the disease. The nervous system is primarily at fault—the fibre of the individual is *toneless* ; the functions of the abdominal muscles, both parietal and visceral are not normal, intra-abdominal pressure is lessened—ptosis takes place. There is stasis in the blood and lymph vessels, the bowel contents decompose, the excretions are not carried off, absorption of poisonous products goes on and auto-intoxication results—dyspeptic manifestations, neurasthenia, headache, anæmia, lack of energy, palpitation, etc., etc. Polyuria follows as a consequence, while Graves’ disease, scleroderma and myxœdema, are theoretically possible as results of visceral irritation and intoxica-

tion. However obscure the causes of the three diseases may be, few are ready to accept this as an explanation of their etiology.

When we consider the altered relation of the abdominal viscera in a condition of ptosis, the interference with the motor function of the intestine, the great tendency to constipation, the resulting distress and pain, it is not difficult to understand how a state of mental depression or nervousness and of general nerve weakness may result. In whatever relation these two conditions may really be, it is not hard to understand that enteroptosis may be a direct cause of the neurasthenia.

Chlorosis and enteroptosis are doubtless related in both respects.

Chlorosis on the one hand has been regarded as due to a neurosis, on the other as an intoxication, and it would seem that in the teaching of Meinerz some ground for both these theories existed. The left-sided pain is common in chloro-anæmia, and Taylor refers this pain to distention of the colon in an organ displaced downwards. In one of our cases of marked enteroptosis the pain was constantly referred to the left side of the abdomen in the upper quadrant.

Jaundice in such cases may be due to :—

1. Passive congestion of a displaced liver and its results upon the bile passages.

2. To obstruction in the duodenum.

3. To direct pressure upon the bile ducts exerted by a floating kidney.

4. Other causes.

Constipation has already been explained.

Gastric dilatation was at one time thought to be due to obstruction to the duodenum and pylorus, caused by the floating kidney so commonly found associated with it ; it is doubtful if such can be the cause. The position of the stomach and the lack of tone so common in such cases doubtless extends to the muscular wall of the stomach, and in these conditions one finds sufficient explanation for the dilated condition which is rarely pronounced.

The indications for the treatment of enteroptosis as originally recommended by Glénard, are as follows :—

1. The intestines must be elevated and kept in their new position.

2. The abdominal pressure must be increased.

3. The bowels must be regulated.

4. The secretions of the intestinal glands must be increased.

5. The digestion and nutrition must be regulated and stimulated.

6. The whole organism must be strengthened.

These indications, in many instances, are met by the *body binder* so applied as to exert upward pressure and thus support the prolapsed organs while it increases the intra-abdominal pressure. It may be made by ordinary grey cotton pinned firmly about the body.

Then mild purgatives are needed. Massage of the abdomen often does good in stimulating the movements of the bowel and giving tone to the abdominal muscles. The same may be said of electrical (Faradic) applications.

Then the use of alkalies and the choice of such a diet as is most nourishing and easily digested are of importance.

Recently both hot and cold baths have come into favor as giving general tone to the circulation, and Buxbaum recommended the cold Sitz bath as inducing favorable results, especially by reason of its action upon the intestinal circulation and secretion. He advises that they be taken daily for two—five minutes.

The chief advance in the treatment of the condition since 1886 has been in surgery, by which some brilliant results have been brought about. Recently reported cases have come from Treves, in England, who sutured the liver to the abdominal wall; Bernhardt, Ferrari, Terrier and Hartmann, in Europe, and Byron B. Davis, Stengel and Beyea, in America. Gastropexy and gastrorrhaphy have, in different cases, given good results; while in Stengel's case, operated on by Dr. Beyea, the gastro-hepatic omentum and gastro-phrenic ligament were shortened by a tuck made with multiple sutures, thus bringing the stomach up towards its normal place.

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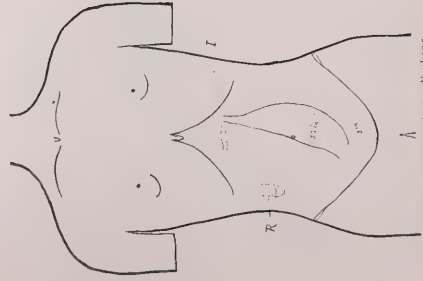


FIG. I. Outline of gastro-diaphragm.

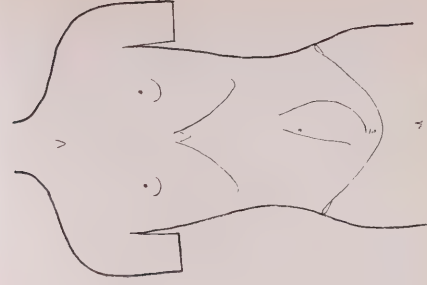


FIG. II. B, Gastro-diaphragm.

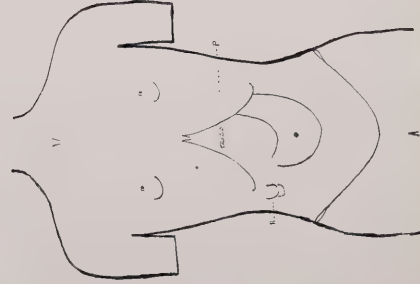


FIG. III. Gaseous Inflation. Stomach about 5 inches wide.

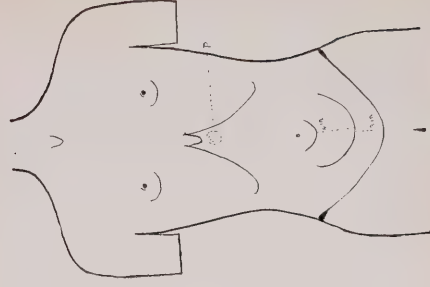


FIG. IV. Gaseous Inflation.

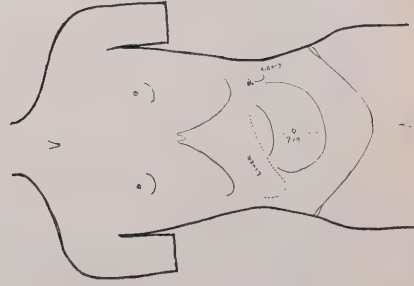


FIG. V. Gaseous Inflation.

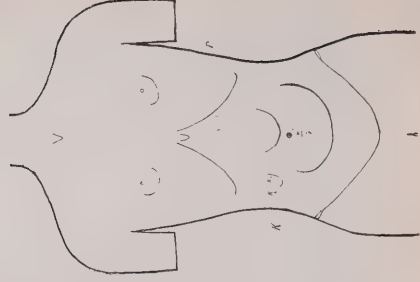


FIG. VI. Gaseous Inflation.

RETROSPECT OF CURRENT LITERATURE.

Medicine.

UNDER THE CHARGE OF JAMES STEWART.

Koplik's Sign in Measles.

HENRY KOPLIK, M.D. "The New Diagnostic Sign of Measles on the Buccal and Labial Mucous Membrances." *Medical News*, 1899, 22.

Koplik presents a third paper, accompanied by a coloured plate of a new diagnostic sign of measles. After years of observation Koplik states that this sign appears in measles only and in no other condition of health or disease. It appears from as long as twenty-four or forty-eight hours, and even three to five days before the skin exanthem. It is present before the signs of conjunctivitis appear, and when little or no fever is present.

Of fifty-two consecutive cases, comprising only a small part of the material examined, the diagnosis of measles was made in thirty-two cases before any sign of eruption appeared on the skin. In three of the thirty-two the diagnosis was made three days before any exanthem appeared. In nine cases the sign appeared forty-eight hours before the appearance of the exanthem. In the remaining twenty cases fully forty-eight hours elapsed before any eruption appeared on the skin, and in none of the fifty-two cases was the diagnosis wrong.

The sign appears pre-eminently on the mucous membrane lining the cheeks and lips. It can also be seen on the mucous membrane lining the cheeks opposite the last molar teeth. It appears only on the buccal and labial mucous membranes and not on that of the hard or soft palate, nor on the mucous membrane covering the fauces. The eruption appears twenty-four hours, forty-eight hours, or three to five days before the eruption on the skin. It is at first discrete and then becomes nummular and confluent, and when the skin exanthem appears and is spreading, it is at its height. It then begins to fade and disappear. If one looks into the mouth in a case of measles before the exanthem has appeared, he sees the usually described redness of the fauces and

in some cases a few indefinite spots of red on the soft palate. In a strong glaring daylight one sees at this period on the mucous membrane lining the cheeks and lips a distinct pathogomonic eruption. It consists of small irregular spots of a bright red colour and in the centre of each spot is the sign referred to, a minute bluish-white speck. There may at first be only two or three or six such rose-red spots with the bluish-white speck in the centre. Sometimes the bluish-white centre is so small and delicately coloured that only in a very direct and strong daylight is it possible to bring out the above effect. Ordinary manipulation, such as passing the finger over these spots does not remove them, but brushing sometimes does. The spots are at first discrete, but as the rose-red spots increase in number they coalesce, presenting large areas of rose-red studded over with minute raised bluish-white specks, relieved here and there by normal mucous membrane. Finally the whole buccal and labial mucous membrane becomes of a uniform rose-red colour, studded with myriads of bluish-white specks. At this time the skin exanthem has appeared and is spreading. When the skin exanthem is fully developed, the buccal eruption begins to fade and lose its characteristics.

The writer points out the great value of this sign in making an early diagnosis of measles, and also as an aid in differentiating measles from other affections. The claims of the writer upon the value of his sign seem to be fully confirmed by reports from foreign and American clinics.

Etiology of Glandular Fever.

J. H. HAINEBACH. "On the Etiology of Pfeiffer's Glandular Fever."
Deut. Med. Woch. 1899, 26.

Pfeiffer, in 1889, first called attention to a condition which he termed glandular fever. Although chiefly a disease of childhood, several writers have described cases in adults.

The disease usually begins with tolerably high fever, headache, pains in the neck on swallowing, and especially in movements of the head. Constipation is usually present, seldom diarrhœa. Swelling of the glands of the neck, frequently visible, and usually starting on the left and later involving the right side sets in about the same time as the general symptoms. The glands, both in front and behind the sternomastoid, are involved. They are moderately hard and very tender, and each gland is separate. The head is kept fixed and sometimes slightly drawn towards the more affected side. The throat is normal or only slightly reddened. Abdominal pains are complained of in many cases, and there is sometimes tenderness about the umbilicus. After one to several days the temperature falls to normal, the painful swelling dis-

appears, and there is a return to health. Eventually perfect recovery ensues, although in weakly children the disease has proved fatal, whilst suppuration of the gland and middle ear disease occur in exceptional instances. Acute hæmorrhagic nephritis is a more frequent complication, fifteen instances having been collected from the literature by the writer.

That the disease is an infectious process is proved by its general features, by its frequent endemic occurrence, its contagious character, as well as the relatively frequent complication of nephritis. The origin of the disease is, however, somewhat obscure. Most writers regard it not as an affection *sui generis*, but as an abortive form of some known infectious disease. The writer records a case of a rather severe type occurring in a boy of eight. The condition was marked by glandular swelling of the neck, a normal throat, enlargement of liver and spleen and nephritis. On the twelfth day renewed swelling of the glands and fever set in and ultimately recovery.

Bearing on the etiology of the case the writer points out that a brother and sister of the child had a few days previously suffered from a typical follicular angina, and he considers that the same infectious agent (strepto- or staphylo-cocci) was at work in all three instances. Charlotte West has reported a similar instance in which a child suffered from glandular fever, his two nurses having just previously had attacks of angina.

Whether other micro-organisms are capable of inducing glandular fever is uncertain. Cyajkowski found bacilli in the blood and glands of three cases which were probably identical with the influenza bacillus.

Pneumococcal Empyema.

VIERORDT. "On the Nature and Treatment of Pneumococcal Empyema." *Deut. Arch. Klin. Med.*, Bd. 6.

Vierordt discusses the nature and treatment of pneumococcal empyema in an interesting manner. Numerous reference to the literature of the subject shows a great divergence of opinion on the prognosis and treatment of this condition. Certain writers, especially Netter, regard the outcome as favorable in many instances, either from rupture through a bronchus or from absorption. On the other hand many are inclined to regard the affection in question as quite as serious as a strepto- or staphylo-coccus infection, and believe that no difference should be made in the treatment of an empyema simply because one or other form of bacteria is found in the pus. It would certainly seem the safest rule to adopt to evacuate pus wherever it is found, rather than to temporise and jeopardise a patient's life in the hope of spontaneous cure.

Vierordt's personal experience is strongly in favour of prompt surgical interference. Even in children the malignant type of pneumococcus infection is too frequent to allow of any undue delay in resorting to active treatment. Small empyemata, often difficult to recognize, are sometimes the cause of a fatal termination, whilst incision and the escape of a few centimetres of pus may relieve at once high temperature and other symptoms of septic absorption. After quoting a number of cases illustrating the virulence of pneumococcal empyema, the author concludes that there are always certain chances of an unfavorable issue when purulent collections are left alone, or when left too long. Although his observations are made on children, he believes that no difference should be made in treatment of an empyema, whether due to pneumococcus or other forms of infection.

Abortive Types of Pneumonia.

STEINER. "Der Kruntniss des Kurz Dauerded Crouposen Pneumonien."

Steiner defines pneumonias of short duration, as those which end before seven or nine days and yet present the same symptoms as ordinary croupous pneumonia. It is not, perhaps, very generally recognized that abortive types of pneumonia running a course of from one to three days are occasionally met with. This type was found in 27 of 1,157 cases observed in the Leipsic clinic.

The recognition of such cases is by no means always easy. In six cases recorded the affection of the lobe of the lung was evident on percussion and auscultation, in eleven cases the local affection was circumscribed and the physical signs were more or less distinct; and in six cases the diagnosis rested on symptoms, percussion being negative and auscultation only in some cases gave any evidence of the condition.

The onset is sudden and unexpected and the single symptoms seem to come on even more rapidly than is usual in ordinary pneumonia. The rapidity with which the symptoms disappear is also very striking, but the local evidences of infiltration often remain for periods varying from four days to six weeks.

The symptoms in these cases do not differ from the more usual types. Setting in with a rigor there is pain in the side, rusty sputum, high fever, herpes, alteration in the pulse-respiration ratio, and fall by crisis. Naturally one or more of these symptoms may be absent just as they are in cases running the ordinary course. The result of these cases is invariably favourable. Their short duration is to be attributed either to an attenuated virus or to increased resistance in the individual.

F. G. Finley.

Surgery.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

Operation for Umbilical Hernia.

HOWARD MARSH. "On the Method of Operating for Umbilical Hernia, Whether for Radical Cure or When Strangulation has Occurred."
British Medical Journal, June 17, 1899.

Marsh, in operating, recommends making an elliptical incision extending from the upper to the lower border of the tumour, at first through the skin, then through the subcutaneous tissues, keeping close to the sac until its neck is reached. Having thus rapidly isolated the sac, it is opened and omentum, when present, is traced to the neck, freed at once from its surroundings, ligated in strands and severed, and then the distal portion is rapidly unravelled and freed from the intestines.

By following this method instead of the one usually described in text-books, namely, freeing the omentum from the bowel preparatory to tying it, Marsh claims that he shortens the operation by one-half.

Infiltration Anæsthesia.

HEINZE. "Infiltration Anæsthesia." *Arch. für Path. Anat. und Phys.*, 1898, Bd. cliii., Heft 3.

Heinze carried out a series of tests upon himself with the various anæsthetic solutions commonly employed, and showed that their anæsthetic properties depended upon the amount of cocaine they contained, and not upon any peculiar properties attributed to the combined action of their other constituents. He also showed that the anæsthetic effect of cocaine and of eucaine— β were equal, the latter having the following advantages:—less irritant, less toxic and capable of being repeatedly sterilised without interfering with its action. He recommends the following formula:—

Eucaine— β , gr. i. ss.

Sodium chloride, gr. xii.

Distilled water, ℥xxvi .

Braume (*Arch. für Klin. Chirur.*, Sept., 1898), agrees with Heinze as regards eucaine— β , and notes the fact that it, like cocaine, cannot be employed when the actual cautery is used as the heat destroys the anæsthetic properties of the drug.

Operation for Gastropotosis.

STENGEL AND BEYEA. "Gastropotosis, Reports of a Case in which a New Operation was undertaken and the patient greatly improved." *American Journal of the Medical Sciences*, June, 1899.

The authors, after specifying in detail the clinical history of the patient and the temporary improvement following nephrorrhaphy, proceed to describe the operation performed as follows :—

The patient was so arranged on the operating table that the chest and upper part of the abdomen could be raised or lowered at will. A four-inch incision was made in the linea alba midway between the umbilicus and the xiphoid cartilage, which exposed a portion of the lesser curve and cardiac end of the stomach, the gastrohepatic omentum the gastrophrenic ligament, and the lower border of the liver. Elevation of the upper part of the table put the gastrohepatic ligament on the stretch and still further displaced the stomach downwards. A series of fine silk sutures, introduced by small round, pointed and curved needles, were so inserted that when tied they shortened the gastrohepatic omentum and the gastrophrenic ligament. The upper stitch was placed as close as possible to the upper border and the lower to the lower border of these peritoneal folds. Two series were employed ; in the first row some eight or ten stitches were placed, in the second, four. After this had been accomplished the stomach was seen to occupy what was thought to be a normal position.

The patient made a normal convalescence. She was given nothing but sips of hot water for forty-eight hours, then drachm doses of milk and lime water hourly, this being gradually increased until the fifth day, when she was allowed five drachms hourly. She was kept in a recumbent position from April 19th to June 28th. On November 10th the patient had gained ten pounds, and on the following March 14th, a still further gain of nine pounds had taken place. She reported herself free from gastric disturbance, had a better appetite and was able to do more work about the house. The stomach was inflated with air and it was found to have maintained the same position which it held at the preceding examination.

The writers also record the methods which have been adopted by various operators in correcting displacements of the liver, stomach and intestines up to the time they operated.

The Technique of Laryngectomy.

W. W. KEEN. "The Technique of Laryngectomy." *Annals of Surgery*, July, 1899.

The method of operating which Keen proposes to employ in his next

laryngectomy, having gained valuable experience in his last, is briefly as follows:—The Trendelenburg position is to be preferred where the operator is about to open the trachea. The larynx and upper part of the trachea are to be freed in front and on each side, while the patient is still in the ordinary recumbent position. Traction of the trachea should be made below the beard line and the distal portion united to the skin by means of three sutures placed laterally and in the median line, these to be preferably of slightly chromatised catgut to prevent subsequent difficulty in their removal when drawn within the trachea. A large-sized tracheotomy tube is introduced and instead of its inner tube a Nahn canula is used, through which anæsthetization is continued. The upper wound is closed, the deep portion by catgut and the skin by silk-worm gut, a small gauze drain being left *in situ* for twenty-four hours. The open trachea is protected externally by a hollow wooden cylinder covered externally by gauze to act as a filter.

The Trendelenburg position is maintained for twenty-four hours, nutritive enemata being given for forty-eight hours, and the patient is allowed to swallow on the third day, and to go about on the fifth day.

Dr. Keen would advise a preliminary tracheotomy when the patient suffers much from dyspnœa as a means of preparing the patient for the main operation, not as a preliminary. While Keen does not claim priority for any one step the *tout ensemble* is original.

A. E. Garrow.

Reviews and Notices of Books.

PROGRESSIVE MEDICINE. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by HOBART AMORY HARE, M.D. Vols. I. and II. Philadelphia, Lea Brothers & Co., 1899.

In the preface to the first volume of the series the editor briefly announces the scope of the work, which is intended to be an improvement on the various "annuals" and "year-books" already known to the profession, all of which contain, with some useful information, much also that is useless, necessitating the very process of sifting that they are supposed to obviate. In the present series this object is to be attained, not only by a careful selection of contributors, each specially qualified to deal with the subject allotted to him, but also by the presentation of the subject matter in a narrative form, expressing "not only the views of the authors cited, but the opinion of the contributors as well." Each contributor is consequently both a compiler and a judge, speaking *ex cathedra*, of the material presented to the reader. This plan, while no doubt of advantage to the reader, increases the responsibility of the writer to a corresponding degree. We are not sure that the majority of readers would not prefer to draw their own conclusions of the respective value of the material presented to them in the compilation. As regards the general arrangement of the work, there is no attempt at more than a rough grouping of the subjects treated. For example, the first volume contains sections on the surgery of the head, neck and chest, diseases of children, pathology, infectious diseases, laryngology and otology, while the second volume contains another surgical section, that of abdominal surgery, a section of gynæcology, and one on ophthalmology. At the end of each volume is an alphabetical index of the subjects treated, with occasional reference to authors cited.* In a work which is presumably intended as a book of reference, one misses a more orderly arrangement of material, indicated by some system of numbering or lettering to which subsequent issues would conform, and reproduced in a comprehensive index, rather more detailed than the one actually given.

The subject matter of each section certainly appears to have been carefully selected and is presented in an attractive and readable form, which is in marked contrast to the crude compilation of some of the older encyclopædic works. There are very few typographical errors

* Foot note references to authors and articles are given in both volumes.

and the printing is excellent, though for their size the volumes are rather heavy, which is due to the quality of the paper used.

It is impossible to notice more than a few of the principal topics discussed in these volumes. In the first volume the surgery of the head, neck and chest is fully treated by J. Chalmers DaCosta. As to operative treatment in exophthalmic goitre, a conservative view is taken both as regards thyroidectomy and operations on the sympathetic, and it is held that rest and medical treatment should be tried before operative interference is advised. The same rule applies to goitre unless there are cysts, or many large and separate tumours, a suspicion of malignancy, or, in any case, dyspnoea. A similar conservatism is advised for tubercular (more properly tuberculous) glands of the neck and the statement is made that incomplete removal may lead to general tuberculosis (and complete removal is not easily attained), with which opinion we thoroughly agree. The surgery of Abscess of the Lung receives adequate consideration; operations on Bronchiectatic Cavities are considered as a rule unsatisfactory.

Considerable space is given Murphy's method of artificial pneumothorax for the cure of pulmonary tuberculosis, and a trial of the method is favored "in such a relentless (?) disease as phthisis." Among other interesting articles in this section are those on Suture of the Heart, Erysipema and Cancer of the Mammary Gland, in which the most modern views are thoroughly discussed. The sub-section on Brain Surgery is very full and satisfactory. The statement that "the surgical treatment of iodicy is futile" is followed by a review of opinion chiefly favourable and some contrary to this view. With regard to brain tumours, the writer thinks that "practically every brain tumour, except a gumma, demands operation, and even a gumma may call for it." The Surgical Treatment of Epilepsy "is distinctly disappointing," though "cerebral operations for the treatment of epilepsy, employed in carefully selected cases, may cure a small number of them and may temporarily improve many." Abscess of the Brain, the Operative Treatment of Trigeminal Neuralgia and some minor topics conclude the surgical section.

In the section on Diseases of Children, A. D. Blackader gives a clear and concise account of the most recent opinions on the modifications of cows' milk for Infant Feeding and expresses his preference of Pasteurization to sterilization. In the treatment of the Diarrheas of Infancy there is nothing specially new, but stress is laid upon the strict limitation of the dietary, lavage of the stomach and large bowel, and the avoidance of opium. Caution is advised in the use of intestinal antiseptics both in irrigation and internally. Bismuth and tannogen are recommended. The article on Bronchopneumonia contains much practical information, and that on Cardiac Complications in Rheumatism

once more draws attention to the often indefinite characters of the rheumatic attack and the great frequency of the cardiac complication, "in the acute rheumatism of adults it is arthritis, while in that of children it is carditis, which plays the most important part." Among other interesting articles are those on Meningitis, Lumbar Puncture, Glandular Fever and Diphtheria.

Recent Advances in Pathology are dealt with by Ludwig Hecton under the headings of Pathology of Infection, Pathogenic Micro-organisms (some new species are described), Retrogressive and Progressive Changes, Tumours and Miscellaneous Topics in Pathological Anatomy. In the section on Infectious Diseases, by W. S. Thayer, the most interesting article is unquestionably that on Malarial Fever, in which the musquito hypothesis of infection and the vexed question of "black-water fever" are fully considered. Attention is also drawn to nephritis of malarial origin. Thirty-seven pages are devoted to Typhoid Fever. Some of the rarer sources of infection are cited, and cases without intestinal lesion recorded. A plea is made for a more generous diet throughout the course of the illness. This idea is not so new nor the practice so very infrequent as to justify the very voluminous quotations from a somewhat obscure Russian physician. The cold-bath treatment, of course, comes in for its usual quota of approbation and condemnation. The conclusion, in which all but fanatical hydrotherapeutists will agree, is that there must not be cast-iron rules for this any more than for any other form of treatment. A good summary of the Bubonic Plague, articles on Cerebro-Spinal Fever, Yellow Fever and Pneumonia (in which Pans's antitoxic serum comes in for a somewhat lengthy and favourable notice), conclude the section. The volume closes with a section on Laryngology and Rhinology.

Volume II. opens with Surgery of the Abdomen, by W. B. Coley, who does full justice to all the "live questions" with which this branch of surgery is so replete. The article is profusely illustrated and is distinctly more controversial (after the manner of surgeons) than most of the medical sections. In the gynæcology section, by J. G. Clark, the *pièce de résistance* is Retroflexion of the Uterus, to which thirty-five pages are devoted! To one who is not a specialist the most interesting part of this article is the sample of Professor Säger's humorous poetical effusion entitled "Uterus quidam retroflexus," which begins, "Ach! liebe Leute, lass mich liegen!" and which one would wish had been quoted in full. Diseases of the Blood, Diathetic and Metabolic Diseases, Diseases of the Spleen, Thyroid Gland and Lymphatic System are dealt with satisfactorily by Alfred Stengel. There is nothing specially new in the section on blood diseases except the article on Acute Leukæmia. In the section on Diseases of Metabolism the chief interest centres on

Addison's Disease and Diabetes Mellitus. In the latter article the discussion on the relationship of diabetes to the various organic lesions underlying the syndrome is particularly good. A review of recent work in Ophthalmology by Edward Jackson concludes the volume.

It is difficult to form a just estimate of the value of the compilation. It is certainly more readable than most encyclopædic treatises and more attention has been paid to the form in which the subject matter is presented to the reader. The introduction of the personal element in the compilation is, no doubt, to be thanked for this. It is, however, impossible not to remark that here and there want of proportion exists in the space devoted to individual topics, which cannot be accounted for in all cases by the importance of the subject, or be justified by the amount of really new and interesting information afforded. Time and the subscription lists will, no doubt, show whether this work has adapted itself more fully to the wants of the general practitioner than its predecessors have done.

H. A. L.

INTERNATIONAL CLINICS. A Quarterly of Clinical Lectures on Medicine, Neurology, Surgery, Gynecology, Obstetrics, Ophthalmology, Laryngology, Pharyngology, Rhinology, Otology and Dermatology, and specially prepared articles on Treatment and Drugs. By Professors and Lecturers in the Leading Medical Colleges of the United States, Germany, Austria, France, Great Britain and Canada. Edited by JUDSON DALAND, M.D. (Univ. of Penna.), Philadelphia. Vols. I. and II. Ninth Series, 1899. Philadelphia, J. B. Lippincott Company, 1899. Canadian Agent, Charles Roberts, Montreal.

Among the thirty-six contributors to the present volume, consisting as they do of many of the best-known men on two continents, one would be indeed surprised if there was not something more than ordinarily worthy of note ; and the book does not belie one's expectations.

With such a large number of articles to select from it is quite impossible to notice more than a few, and we shall, therefore, confine ourselves to giving a brief account of several which can be taken as typical of the character of the book.

Under the heading of *Drugs and Remedial Agents* is an article by Horatio C. Wood on "Cold as an Antipyretic," in which the use of cold water in the form of baths and packs, and of the cold air bath is described and the common-sense reasons for their employment given. The oft-forgotten fact, one that used to be emphasized by the late Dr. R. L. Macdonnell in his ward clinics, namely, that it is physiologically impossible that a cold can be taken while the body temperature is above normal, is an incontrovertible argument against the supposed danger

from exposure, and is rightly held by Wood to dispose of perhaps the most commonly advanced argument against cold baths. The author goes so far as to declare that cholera infantum can be prevented in the infant as readily as sunstroke in the adult by preventing exposure to heat!

Under *Treatment*, Dr. A. T. Davies, of London, advances strong arguments for the use of local applications of ipecacuanha, by means of a spray, in chronic bronchitis. Making use of the ordinary hand-ball-spray apparatus, the ipecacuanha wine is introduced into the mouth while the patient breathes as deeply as possible, as much as from one to four drachms being used at a sitting. The cases quoted all showed marked improvement.

The "Treatment of Brain-Fag and Insomnia by Static Electricity" as described by Dr. J. L. Howard, of Indiana, makes one question what part the electrization took in the cure, and what would be left were the psychical effect of the baths and the usual routine carried out at the springs (French Lick) eliminated.

Dr. G. Variot, of Paris, has contributed a valuable article on the treatment of "Acute Laryngitis in Children," while Professor Eulenburg writes on the present state of the treatment of Tabes, discussing the antiluetic, pharmaceutical, surgical and mechanico-orthopædic treatment, etc., in an able and critical manner.

Under the heading of *Medicine* we note an exhaustive lecture on "Laryngospasm, Eclampsia, and Tetany in Children and Their Connection with Rachitis and with One Another," by Professor Baginsky, of Berlin, and a clinical lecture by Dr. W. F. Hamilton, of Montreal, on a case of "Pyopneumothorax." The history of the case is given in full, and then the physical signs are discussed in detail and their value and mode of production pointed out. The etiology, prognosis and treatment also receive attention.

Dr. Alfred Fournier, of Paris, has written a very striking lecture on the "Frequency of Cases of Unsuspected Syphilis," and shows, mostly from his own experience, how the not unnatural habit in most patients of concealing the fact that they have suffered from this disease, often leads to mistaken diagnoses and consequent irreparable injury either to themselves or their children. Or, again, in the case of women, the disease is unsuspected, everything being done to keep the fact from their knowledge, and the unwisdom of such a course in view of the possibility of late tertiary manifestations being unrecognized, is plain. Fournier's advice, to look upon every unexplained disease as a possible case of syphilis, is good.

A plea for the Radical Cure of all cases of Hernia in Children, by Mr. R. W. Parker, of London, states the case very forcibly, if not conclusively.

The statement made by Dr. G. K. Frink, of San Francisco, in a lecture on the "Menopause," that it is a *disease* occurring in women, about middle life, will not, we venture to hope, be accepted by many : though, to his credit be it said, there is no mention of the value of ovarian extract.

Volume II. compares favourably with the one already noticed. The following may be alluded to as articles specially worthy of notice :— "Superheated Air as a Hemostatic," by Professor Holländer, of Berlin, explains the technique and reports the results of this method of treatment in lupus of long standing. It is illustrated by plates showing the disease before and after the institution of treatment. "The Preventive Treatment of Parental Syphilitic Heredity During Pregnancy," by Dr. Fournier, of Paris, will be read with interest by everyone in general practice. "Stuttering, Its Causes and Treatment," by Dr. H. Guizman, of Berlin, makes plain the cause and rational method of treatment in this most unfortunate defect from the experience of one who has made a speciality of dealing with the subject. A clinical lecture by Dr. H. A. Hare, of Philadelphia, deals with many interesting puzzles in diagnosis. "The Roentgen Ray Diagnosis of Renal and Vesical Calculous Conditions," by Dr. C. L. Leonard, of Philadelphia, makes the claim "that an absolute negative as well as a positive diagnosis can be made in every case." "Paranoia," by Dr. G. L. Sinclair, of Halifax, N.S., gives a history of two typical cases with a description of the disease. Two lectures, one by Dr. G. L. Walton, of Boston, and the other by Dr. J. E. Eskridge, of Denver, treating on different types of muscular atrophy, are, quite unintentionally, supplementary to one another. We also note some very interesting cases reported from the surgical clinic of Professor Keen, of Philadelphia, and Professor König, of Berlin. Lectures in the departments of Gynecology, Obstetrics, Ophthalmology, etc., etc., are given a place in this very valuable volume.

The books are illustrated with plates and a considerable number of figures, are printed on good paper free from the gloss so irritating to the eyes which is used in many of the works of American publishers, and we predict will meet as ready a sale as former volumes of this quarterly.

SAUNDERS' MEDICAL HAND ATLASES. DISEASES OF THE SKIN, including an Epitome of Pathology and Treatment. By PROF. DR. FRANZ MRACEK, of Vienna. Authorized translation from the German. Edited by Henry W. Stelwagon, M.D., Ph.D. Philadelphia, W. B. Saunders, 1899.

This volume, by the same author as that on Syphilis and Venereal Diseases already noticed in these columns, is arranged much on the

same lines, a short epitome of the subject being furnished in the first 190 pages. The symptomatology and treatment alone are touched upon and this part of the book is intended only as a supplement to make the atlas more easily understood. The coloured plates are excellent and embrace most of the commoner forms of skin disease and would not be complete without the epitome already alluded to. As is the case with other atlases of this series, there is a short history of the case from which each plate was taken, on the opposite page, and this account includes the treatment adopted and its results. In translating the work, as was necessarily the case in a subject like dermatology in which the nomenclature is so confusing, the American editor has substituted or added in brackets in many cases the commonly accepted name of the disease on this continent for the German equivalent, and has thus rendered the book of more value to those who have not a special knowledge of dermatology. It is to be regretted that so few plates are devoted to the depiction of eczema, a disease which forms a very large proportion of all skin lesions. This is a fault, however, which is common to most atlases of dermatology. Here, there are nine plates of various forms of diseases styled eczema and not one of them is of the commonly met with varieties; indeed, five are of what we are accustomed to look upon as dermatitis, and the other four as parasitic varieties,—trychophyton and mycoticum. Of psoriasis, on the other hand, there are nine excellent plates representing all the various forms of this disease.

In colouring and drawing the plates are equal to any we have seen and with few exceptions convey a correct representation of the disease in the living subject. There are in all sixty-three coloured plates and thirty-nine full-page half-tone illustrations. The work will form a valuable addition to any practitioner's library.

G. G. C.

SAUNDERS' MEDICAL HAND ATLASSES.

ATLAS OF THE EXTERNAL DISEASES OF THE EYE, INCLUDING A BRIEF TREATISE ON THE PATHOLOGY AND TREATMENT. By DR. O. HAAB, Zurich. Authorized Translation From the German. Edited by G. E. DeSchweinitz, A.M., M.D. With 76 Colored Plates and Six Engravings, 228 Pages. W. B. Saunders & Co., Philadelphia.

This work is of an eminently practical character and will form a welcome addition to the library of every practising physician. The first sixty pages are devoted to examination of the eye in disease, and this subject is treated in a manner which makes it one of absorbing interest, and the attentive reader cannot fail to grasp the essential necessity of making a systematic examination of the visual organs in order to arrive at a complete diagnosis.

In ophthalmic practice it will not suffice to discover only one morbid

condition when there are others present, such an error can only be avoided by thoroughness in the method of examination, such as described in this chapter.

The clinical study of all the external diseases of the eye will be found much less difficult when prosecuted with the aid of the numerous and admirable illustrations in connection with the text of the work. The author has combined brevity with accurate description so deftly that the very presence of a clinic seems to pervade the work.

In the matter of treatment, nothing, of course, can make up for want of experience, and the book has yet to be written which will form an adequate guide to all cases ; in fact it must ever remain impossible to describe the delicate shades of therapeutic necessity which the complexed and changing conditions of disease involve. A remedy which may be indicated to day might very well be contra-indicated to-morrow ; it follows, therefore, that written instructions are only applicable in a general way ; in this respect there is no fault to be found with this volume. The principles of treatment are clearly given and may be accepted as correct according to the present views of advanced ophthalmologists.

In reality nearly the whole range of Ophthalmology is covered in this work, as in addition to the so-called "External Diseases," it includes injuries of the eye, diseases of the orbit, cataract and glaucoma, though the operative procedures are of course, not described.

For the practical work occurring in the every-day life of the general medical profession, this book will be found most useful and cannot be too highly recommended.

F. B.

CYCLOPEDIA OF THE DISEASES OF CHILDREN, MEDICAL AND SURGICAL.
Vol. 4. Supplementary. Edited by WM. A. EDWARDS, M.D.
Illustrated. J. B. Lippincott Co., Philadelphia, 1899.

It is now ten years since the first four volumes of Keating's Cyclopædia on the Diseases of Children appeared, and since then great advances have been made in all departments of Pediatrics. The present volume is an effort to carry on the work along very similar lines to the original volumes. The various subjects are treated by writers who are regarded as authorities upon the subjects of which they write. Each subject is brought up to date in an interesting and readable article more or less supplementary to the one in the original volumes. On many subjects additional articles have been introduced. To all those who have the previous volumes of this very excellent encyclopædia we have pleasure in strongly recommending this supplementary volume. Yet not to these only ; every physician who has to deal with children,

either from a medical or surgical standpoint, will find in the present volume an excellent *resumé* of all the advances made in pediatrics during the past few years.

AN AMERICAN TEXT-BOOK OF THE DISEASES OF CHILDREN : Including Special Chapters on Essential Surgical Subjects, Orthopædics, Diseases of the Eye, Ear, Nose and Throat, etc., and on the Dieting, Hygiene and General Management of Children. By American Teachers. Edited by LEWIS STARR, M.D., Assisted by T. S. WESCOTT, M.D. Second Edition. W. B. Saunders, 1898.

The first edition of this work was so favorably commented upon and obtained so large a circulation that it is scarcely necessary to more than mention this second edition and to say that in it the various articles have been carefully reviewed, new articles have been added, some of the original papers have been amended and a number have been entirely rewritten and brought up to date. The volume has been increased in size by fifty pages of fresh material. To all who are in need of an authoritative work representing the best American thought and practice in this department of medicine, we can cordially recommend this book.

THERAPEUTICS OF INFANCY AND CHILDHOOD. By A. JACOBI, M.D., Clinical Professor of Diseases of Children, College of Physicians and Surgeons, etc. Second Edition. J. P. Lippincott Co.

Everything that Jacobi writes is interesting : in the volume before us he has given us an extremely practical work representing the result of his own personal experience. Dr. Jacobi is a firm believer in therapeutics. He says, "Advancing years and experience during a period of increasing exactness in medical methods, have rather strengthened my belief in drugs than otherwise. To employ them with benefit, however, requires skill and experience, both individual and collective, as also judgment and honesty." The work is written for physicians. In this edition some of the subjects have been entirely rewritten, a few new ones added, and an effort has been made to be still more explicit in discussing the doses of drugs and the conditions under which they should be used. We have much pleasure in strongly recommending the work : every chapter contains information which should prove of the greatest service to the practicing physician.

SAUNDERS' QUESTION COMPENDS. ESSENTIALS OF MATERIA MEDICA, THERAPEUTICS AND PRESCRIPTION WRITING. By HENRY MORRIS, M.D. Fifth edition, revised and enlarged. Philadelphia, W. B. Saunders, 1898.

Although the value of such works as this may seem to many prob-

lematical, the large demand for them (the present volume having reached its fifth edition) shows that the plan of putting the information necessary for the proper understanding of a subject into the form of questions and answers, meets with the approval of many who are endeavouring to acquire it in the easiest possible way in order to pass their profession examinations. Possibly, familiarity in earlier years with the catechism method of imparting knowledge has ingrained this system into the minds of our youth, and they find it easier to follow the old, accustomed paths. To such as these, however, the possibility of understanding the answers must constitute a serious drawback. Certainly, as far as the information conveyed is concerned, the book before us is admirable; one can only object to it from the feeling, that it may, by being committed to memory, enable some men who have not the necessary understanding of the subject to pass their professional examinations, and who, in after years, will turn of necessity to the ready-made-prescription journals for this most important part of a physician's armamentarium.

THE PATHOLOGY AND TREATMENT OF SEXUAL IMPOTENCE. By VICTOR G. VECCHI, M.D. From the Author's Second German Edition, Revised and Rewritten. Philadelphia, W. B. Saunders, 1899.

Books of this class have become considerably more numerous of late years, and one must conclude that there is a demand for them. Judged, too, by the amount of advance advertising many receive, the sales must justify the large amount of money spent in this way. This book contains 283 pages divided as follows:—The first twelve pages are devoted to an introduction—in other words, the author's apology for his production. Then follow fifty pages on the anatomy and physiology, eight on etiology, one hundred and twenty on the forms of impotence, five on diagnosis, four on prophylaxis and fifty on treatment. It is not too much to say that all that the volume contains of use to the practicing physician could be easily condensed into fifty pages, and the reader would be the gainer thereby. For instance, the forms of impotence are divided into physical, psychical, and those consecutive to some disease. A mere enumeration of the congenital defects and acquired malformations which produce physical impotence conveys to the professional reader quite as much information as a citation of cases, while as regards psychical impotence, the reports of many of the cases recorded can only be characterized as vile. It seems a pity that in a book, such as this, written for the purpose of supplying the practitioner with the requisite knowledge for treating an unfortunate class of patients, all unsavory details should not be omitted.

DISEASES OF THE STOMACH. By W. W. VAN VALZAH, M.D., Professor of General Medicine and Diseases of the Digestive System, N. Y. Polyclinic; and J. DOUGLAS NISBET, M.D., Adjunct Professor of General Medicine and Disease of the Digestive System, N. Y. Polyclinic. Philadelphia, W. B. Saunders, 1899.

A carefully written book on the subject of gastric diseases in which diagnosis and difficult diagnosis are dealt with in great detail—often, indeed, to the extent of vain repetition. The nomenclature differs from that usually employed, though this is comparatively unimportant as the pathological conditions are classified pretty much along the same line as in other authorities.

The diagnostic tests are dealt with in full and often elaborate methods are suggested which would indeed bid fair to aggravate the already existing dyspepsia which is to be treated. Such, for example, is the suggestion for testing the absorptive power of the stomach:—"The yolks of four eggs are thoroughly beaten and mixed with 200 cc. of distilled water, in which 25 grms. of dextrose have been dissolved and 30cc. of whiskey are added!" The practical value of this is, however, less to be considered than the scientific bearing on physiology. We are scarcely in the habit of making ether extractions of fats and quantitative tests for sugar with qualitative ones for alcohol when a patient is suffering from flatulence after meals!

The book, however, is unquestionably thorough and gives an admirable description of typical conditions in the various motor and secretory affections of the stomach. Alas! that such affections are so rarely typical and unmixed! The book is worthy of careful study and is of much practical value.

C. F. M.

PRACTICAL MATERIA MEDICA FOR NURSES, WITH AN APPENDIX. By EMILY A. STONEY, Graduate of the Training School for Nurses, Lawrence, Mass.; Late Head Nurse Mercy Hospital, Chicago, etc., etc. W. B. Saunders, Philadelphia, 1899.

The first part of this book, devoted to "General Considerations and the Classification of Drugs," is very clearly and concisely written, facilitating the memorizing of terms, which to beginners would otherwise be an arduous task. In the second part, that of *Materia Medica* proper, the author has briefly described in the same concise and easily understood manner the general physiological actions, therapeutical uses, toxicology and dosage of drugs. The appendix contains a list of poisons with their antidotes and treatment, information which may prove invaluable to any nurse when the life of a patient may hang upon a knowledge of what to do in a case of poisoning.

Taken as a whole, the book should prove far more servicable to nurses than many of the works on *Materia Medica* for students in medicine with which nurses are usually provided, as it gives a general knowledge of the subject without going into all the minute details which are of little or no value to nurses. The manner in which the drugs are classified in Part I., and then alphabetically arranged in Part II., makes it very convenient for reference.

II. E. H.

NEW MEDICAL POCKET FORMULARY FOR 1899. By E. QUINN THORNTON, M.D. Lea Brother & Co., Philadelphia and New York, 1899.

This handy little volume, which is of the size of an ordinary pocket-book and intended to be used as such, contains a collection of prescriptions for all the more important and more frequently met with diseases. As the author says, even the best informed practitioner may at times overlook an appropriate drug ; and a young physician will perform his duty better both to his patient and to himself, if he has at hand the collective experience of the profession. Diseases are arranged alphabetically, and under each are given efficacious prescriptions for simple cases, as well as for the various stages and complications. Quantities are expressed both in the ordinary and metric systems, while at the same time attention has been paid to the palatability and pharmaceutical elegance. We have much great pleasure in recommending the book, not only to younger physicians and students, but to all who wish to keep their therapeutic knowledge up to date.

Society Proceedings.

THE MEDICAL SOCIETY OF NOVA SCOTIA.

The thirty-first annual meeting of this society was held in the Normal School Building at Truro, on July 5th and 6th, 1899.

The officers for the year 1898-99 were :—John McMillan, M.D., of Pictou, President ; Andrew Halliday, M.B., of Shubenacadie, and M. A. Curry, First and Second Vice-Presidents ; and W. S. Muir, M.D., of Truro, Secretary-Treasurer.

The President, Dr. McMillan, presided at all the meetings.

At the first session, after the transaction of the usual routine business, Dr. Robinson Cox, of Upper Stewiacke, read a paper on Graves' Disease, which will be found at page 578 of the August number of the JOURNAL. In the discussion that followed the reading of the paper, considerable difference of opinion was expressed regarding the prevalence of the disease in Nova Scotia, Dr. W. S. Muir, of Truro, holding that it was relatively common as compared with other countries and citing quite a number of cases as occurring in the neighbourhood of Truro, several of which he had reported ; while others from various parts of the province had never met with a case. Dr. D. A. Campbell, of Halifax, in discussing the treatment, showed that the greatest benefit was to be obtained from placing the patient under the most favourable conditions for rest and quiet, combined with a carefully adjusted diet. Medicinally, he placed most reliance upon the long continued administration of very small doses of digitalis. The administration of either thyroid or thymus gland was deleterious, but more especially the former. Dr. G. Gordon Campbell referred to the remarkable antithesis between the symptoms of Graves' disease and myxœdema as pointed out by M. Allen Starr, and to the occurrence of a pseudo-Graves' disease in some cases of enlargement of the thyroid, a condition cured by the removal of the enlarged portion of the gland. He held that these facts proved that increase of thyroid tissue was at least one factor in the etiology of the disease and hence the administration of thyroids would only aggravate the symptoms. Dr. W. S. Muir had had marked benefit in one case by combining belladonna with other drugs which were ineffectual alone.

Dr. F. W. Goodwin reported two cases of meningitis, both of which recovered. The first was a lad of seventeen who presented a group of

symptoms indicating meningitis, but from which he rapidly recovered. The second was his aunt, aged forty, who had watched with him one night, lying down on the bed beside his. Nine days later she developed similar symptoms to the first case, headache, vomiting and delirium, followed by unconsciousness.

Dr. M. S. Dickson, of Great Village, reported two cases of cerebro-spinal meningitis following la grippe. (See page 597 of the August number.)

At four o'clock the meeting adjourned for a drive around the town and five o'clock tea at Victoria Park.

At the evening session the President delivered the annual address, taking as his subject :—"Does Our Educational System Tend to Produce the Highest Type of Manhood in the Youth of the Country." He criticised the system which requires all children to be ranked as equal in facility for acquiring knowledge, and complained that the standard as at present arranged was suitable for the mentally strong and a source of continual dragging for the weaker ones, who were in the majority. The strain of examination should be done away with and the teacher left to judge whether the pupil be fit for an advance to a higher grade. The danger of producing permanent ill effects at the onset of puberty by this too rigid system was forcibly pointed out. A unanimous vote of thanks was tendered to the President for his address.

Dr. Roddick, then, in a very able manner addressed the meeting on the subject of Dominion registration, explaining the scheme which has already appeared in the April number of this journal. The very interesting discussion which followed, showed that the Nova Scotia Medical Society was unanimously in favour of the proposed legislation.

Dr. G. Carelton-Jones, of Halifax, discussing the subject of vaccination from the Provincial standpoint, showed that the Province was entirely unprotected and urged the necessity of a compulsory law.

SECOND DAY.

The following were elected officers for the ensuing year :—

President—D. McIntosh, M.D., of Pugwash.

First Vice-President—C. A. Webster, M.D., of Yarmouth.

Second Vice-President—F. S. Yorston, M.D., of Truro.

Secretary-Treasurer—W. S. Muir, M.D., of Truro.

A discussion on the subject of Vaccination was taken part in by a large number of those present, and resulted in the following resolution being adopted :—

"That whereas it is advisable that legislation should be secured to establish a system of compulsory vaccination in Nova Scotia, and in order to carry out the same, a system of registration of births, the

obtaining of legislation on matters pertaining to the professional and public health ; Therefore, Resolved, That a Standing Committee be appointed to secure such legislation ; and that this committee shall report at each annual meeting."

The following were appointed a committee for this purpose :—Drs. G. Carleton-Jones, J. F. Black and D. A. Campbell, of Halifax ; A. P. Reid, of Middleton ; and A. S. Kendall, of Sydney.

The following resolution was passed, endorsing Dr. Roddick's scheme for the obtaining of Dominion registration :—"That, having heard Dr. Roddick's explanation as to the carrying out of Dominion registration, this society is fully in accord therewith, and will, as far as is in their power, assist in carrying out the scheme."

Dr. James Ross, of Halifax, read a paper on "Prostatic Affections in Young Men" ; Dr. Webster, Dr. Graham Putnam's report of a case of "Sporadic Cretinism" (see August number, page 592) ; Dr. G. Gordon Campbell, of Montreal, "A Case of Sporadic Cretinism" (see August number, page 594) ; and Dr. W. H. Hattie, of Dartmouth, "Internal Secretion." The last three were discussed together. Dr. Webster of Yarmouth, referred to a case, a boy of ten years, who presented many of the symptoms of cretinism, yet a year's course of thyroid extract had failed to produce any improvement, and asked whether the age of the patient had any influence as regards prospect of improvement from this form of treatment. Dr. Eaton, of Truro, referred to a patient, aged 30, in whom marked benefit had ensued. Dr. Carleton-Jones, of Halifax, thought one ought to be very guarded in using thyroid in conditions other than cretinism and myxœdema, he alluded to its action in obesity and cited one case where prolonged use had enfeebled the mental powers, although recovery followed cessation of the drug. Dr. W. S. Muir, of Truro, had had a case of myxœdema in which thyroid extract had proved useless until combined with phosphate of potassium. He considered it harmful in Graves' disease, and thought that whenever used it was imperative to watch carefully the pulse and respirations.

Dr. J. H. Mackay, of Truro, exhibited a girl of twelve years of age in whom the whole scalp had been torn off by being caught in the revolving shaft of a wind-mill. An attempt to replace the scalp had not been successful and he proposed to cover the granulating surface by grafting.

At the afternoon session a discussion on the subject of "Dyspepsia, Acute and Chronic," was opened by Dr. M. A. B. Smith, of Dartmouth, a demonstration of the exact methods of diagnosis by means of a test meal being given. The speaker dwelt strongly on the need of making accurate investigation as to the cause before venturing on any form of treatment. The discussion was continued by Dr. F. S. Yorston, of

Truro; Dr. G. Gordon Campbell, of Montreal, and Dr. Halliday, of Shubenacadie, who had made a number of experiments on gastric digestion of himself, having acquired the power of regurgitating his food at will.

The following papers were also read :—"A Case of Abscess of the Lung, Operation—Recovery," by Dr. J. W. McKay, of New Glasgow ; "A Case of Congenital Hernia With Peculiar Symptoms," by Dr. D. A. Murray, of River John ; "Notes of Two Obstetrical Cases," by Dr. W. Rockwell, of River Hibbert ; and "Typhoid, Tuberculosis, Pregnancy of the Primiparæ, Which ?" by Dr. W. S. Muir, of Truro.

In the evening after a short discussion in surgery on "Tetanus," the annual dinner was held in the Learment Hotel, and a very successful meeting was brought to a close.

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THE MEDICAL ALLIANCE OF AMERICA.

The physicians and general public of Montreal are at present being solicited to become members of a society styling itself *The Medical Alliance of America*, and claiming to be "a conclave of physicians and surgeons organized for the purpose of supplying medical attendance and medicines in sickness or accident for a small weekly investment." The inducements offered by the agent of the society to the physician are :—(1) That the physician shall receive at least \$1.00 for every visit paid to members of the Alliance. (2) That the physician will still have the privilege of attending his own private patients (provided they, too, are willing to become members of the society), the members being allowed to select any doctor connected with the society to attend them. (3) That, as there are a large number of persons joining who have no regular physician, these individuals will become patients of the various doctors connected with the Alliance. (4) That the principle on which the physician is paid for his services is completely the opposite to that of the ordinary benefit society and free from the objections arising from that system.

To the public, on the other hand, the Alliance offers for the payment of a small sum (10 cents) weekly, that they will be "entitled to call in any of the physicians or surgeons of the Alliance at any time for the slightest cause" and that they will "supply the necessary medicines free of charge." At the end of ten years, moreover, the total amount paid in (\$52.00) will be paid back to the member, the inference being that he has obtained his medical attendance during this period of ten years for nothing.

Let us, however, look into the matter a little more closely. The following is taken from the agreement made between the Alliance and the physician becoming a member :—

"For and in consideration of such services the first party (the Alliance) agrees to compensate the said second party (the physician), as follows :—

"To place in a fund to be known as the 'Medical Expense Fund' the sum of *twelve cents* (monthly) for each and every member entitled to the above-mentioned attendance and medicines as shown by the books of the Alliance, and to divide the sum total (monthly) by the total number of visits made and reported by the physicians of the district, which division will show the actual amount due each physician for each call made; but in no case shall any physician receive an amount in excess of two dollars (\$2.00) for each house visit and one dollar (\$1.00) for each office call (which amount will include the cost of medicines furnished), and the excess, if any, will be carried over to the succeeding month; and if, on the first day of January of each year there still remains a surplus, the same will be divided equally between all the physicians employed by the Alliance *pro rata* to the number of calls reported during the preceeding year."

As will be seen by carefully reading over this part of the contract, the physician is not guaranteed anything—he is to receive whatever remains of the twelve cents a month per member after the medicines have been paid for, and although this may amount to a dollar or more per visit, it may, on the other hand, only amount to twenty five cents or even less. Granting, however, that twelve cents a month per member is sufficient to pay the physician at least a dollar a visit, what becomes of the other thirty-one and one-third cents collected from each member? At the end of a year each member has paid to the society \$3.76 cents over and above what goes to form the "medical expense fund," and the society guarantees (?) to return at the end of ten years the full amount of \$52.00 paid in. Now, leaving out of consideration all expenses connected with the collection and investment of the money, \$3.76 a year invested at five per cent. compound interest (a rate it is impossible to obtain at the present time) will only amount at the end of ten years to \$47.28, so that for every member who faithfully lives up to the terms of the contract, the society at the termination of ten years will be \$4.72 out, besides the expenses incurred in paying the promoters', agents', and collectors' salaries. How then, one asks, is it possible to do a paying business on this basis? For answer we turn to the agreement entered into between the Alliance and the member, in most cases a poor working man. This reads:—

"In consideration of the prompt payment of \$0.10 weekly, ... shall be entitled to medical attendance and medicines from any of the physicians of the Alliance in case of sickness or accident of any kind, except chronic or venereal diseases or diseases not common to both sexes. And in further consideration of the prompt payment of the amount above mentioned for a period of or exceeding ten years, the said member will upon surrender of this book at the office of the company be entitled to a sum in cash not exceeding the amount stated in the following 'table of values' (\$52.00 at the end of ten years) as his or her proportion of the profits of the Alliance."

Note, that here there is again no guarantee to pay any amount, the only definite point being that the amount is *not to exceed* \$52.00. The secret of the whole scheme is, however, contained in one of the rules printed on the back of the member's contract, which reads:—

"Failure to make payments for thirty days will cause this agreement to be lapsed, void and of no effect."

How many men of the working class will be able to continue paying for each member of their families the sum of ten cents a week for ten years, even with the possible chance of some part of it being returned at the end of that time? Indeed, no one would go into it were it not for the inducement of free medical attendance and free medicine. Is it creditable, then, to the profession, even supposing that they are paid for their services at the rate of a dollar a visit, that they allow, by the use of their names and services, of the carrying on of a species of insurance which can be profitable only to the promoters, as by far the greater majority of members will be forced to drop out before they are in a position to reap any of the doubtful benefits accruing at the end of ten years. Then, again, how much better financially it is to the physician than the benefit society? If \$1.44 a year is sufficient to pay at the rate of a dollar a visit for patients of all ages and both sexes, surely \$1.00 (the amount usually received from the benefit society) will suffice to pay at the same rate, when the members are mostly young men in the prime of life and selected by the doctor whose patients they are to become?

But, it may be argued, even if an individual is unable to continue his payments for the full term of ten years and so receive back the amount of money paid in, he, at least, is receiving the benefit of free medical attendance and free medicine while he is a member. We have shown, however, that \$1.44 a year is deemed sufficient by the society to pay for all medicines and the physician's fees at the rate of a dollar a visit. Who will be benefitted by the remaining \$3.75 cents yearly paid to the society; the physician, the member or the promoter?

One other point we wish to allude to, namely, that in soliciting the physician to join the society, the agent states that, if not satisfied, the physician is at liberty to sever his connection with it at any time. Part of the agreement reads as follows:—

"This agreement will terminate January First, ..., or may at any time be terminated by the *mutual consent* of the parties hereto."

The italics are our own. What if the consent of the Alliance is withheld, most of the contracts that we have seen being for the term of ten years?

Dr. J. M. Martin, '89, was married on June 21st to Mrs. Starr-Keefer, the well-known temperance lecturer and author. Dr. Martin, since his graduation at McGill, has taken the degrees of L.R.C.P. Eng., and M.R.C.S. Lond., and intends to follow the practice of his profession in England.

The first holders of the newly founded Research Fellowships in Pathology of McGill University will be W. W. Ford, B.A., Adelbert College,

M.D., Johns Hopkins, and John McCrae, B.A., M.B., first class honour man in Natural Science and Arts and late Fellow in Biology in the University of Toronto, late house surgeon to the Toronto General Hospital.

The College of Physicians of Philadelphia announce that the fifth Triennial Prize of Five Hundred Dollars, known as the "William F. Jenks Memorial Prize," will be awarded to the author of the best essay on "The Various Manifestations of Lithaemia in Infancy and Childhood, with the Etiology and Treatment." The prize is open for competition to the whole world, but the essay must be the production of a single person.

The essay, which must be written in the English language, or if in a foreign language, accompanied by an English translation, must be sent to the College of Physicians of Philadelphia before January 1st, 1901, addressed to Richard C. Norris, M.D., Chairman of the William F. Jenks Prize Committee. Each essay must be typewritten, distinguished by a motto, and accompanied by a sealed envelope bearing the same motto and containing the name and address of the writer. No envelope will be opened except that which accompanies the successful essay.

It is a pleasure to note the continued and rapid advance of a Montreal student. Dr. Hamilton K. Wright, late Registrar at the Royal Victoria Hospital, after having successfully gained an Exhibition from the British Medical Association, a John Lucas Walker Research Exhibition at Cambridge and having for the last 18 months been pathologist in charge of the admirable laboratory at Claybury Asylum, which is said to be the largest institution of its kind in the world, has now been commissioned by the British Colonial office to spend the next three years in the Straits Settlements investigating Beri-beri and other tropical diseases.

We note with appreciation that the Governors of the Royal Victoria Hospital have installed an excellent English billiard table for the use of the Resident Staff. Such care for the recreation of the staff is worthy of the highest commendation and gratitude: for often in hospitals it is thought sufficient to provide the Resident with bed and board, and little or no care is taken to brighten those hours when the men are not supposed to be in the wards or outpatient department. And provided that regulations are made and enforced that such billiard room be only used during hours which can be legitimately devoted to recreation, that, for example, it be not open during daylight when the staff on leave should be in the open air, and provided, again, that it be closed at night at the hour when the residents make their evening rounds, and that it be not

too far removed from the call bell, so that they may easily and immediately respond to calls for their services, the billiard room should do nothing but good. It must add to the health, cheerfulness and general usefulness of the resident and afford a pleasant recollection for after life.

The Annual Meeting of Canadian Medical Association held at Toronto on August 30th and 31st and September 1st was, from a numerical point of view, the most successful in the history of the Association. There were upwards of 270 members and visitors registered, and a programme of 53 papers besides the President's address and addresses in medicine and surgery. Although six full sessions were held, it was impossible to overtake the whole of the papers on the programme, and a large number had to be "taken as read." In such large meetings in future a division of the work into sections, a plan which has been tried before and given up on account of the smallness of the attendance, will become a necessity. The pathological exhibit was exceptionally large and interesting, containing specimens and photographs from surgeons in Montreal, Winnipeg, etc., and from the pathological department of McGill University, as well as the large and valuable collections of Trinity Medical College and Toronto University. The exhibit of physicians' and surgeons' supplies, pharmaceuticals, etc., formed an attractive feature, better patronised than usual, perhaps on account of its being the smoking-room of the meeting.

The next meeting will be held in Ottawa, with Dr. R. W. Powell as president.



DR. JAMES ELLIOTT GRAHAM.

Obituary

DR. JAMES ELLIOTT GRAHAM.

We doubt if the medical profession in Canada could have sustained a greater loss at the present moment than has come to it by the death of Dr. Graham, of Toronto, and this not merely from Graham's ability as a consultant and teacher, but because of his character and of what he represented. He was of the highest type of physician ; a man loving his profession for its own sake, a hard-working student throughout his career, one who approached each case that presented itself not as affording something to diagnose, treat and then dismiss, but as a special problem in itself the study whereof would surely yield additional information and would afford new light. Simple and unassuming in his manner and absolutely sincere, the mere force of his character influenced those around him and gained their full confidence. The existence of such a man in a community ennobles that community: his departure is a loss not merely to his colleagues but to the community at large.

In saying this we are indulging in no mere timely adulation. One has but to recall the condition of medicine in Toronto before Graham made his influence felt, to recognize what this influence accomplished. It is a delicate matter for us in Montreal to write concerning the profession in Toronto, but Torontonians have been themselves foremost in deploring the keenness and bitterness of the rivalry long existant there, a rivalry that seemed to forbid unity. There was required not merely a man of high professional attainments, but one of known disinterestedness, whose deep and prevading sense of honour was to be seen in his every action, one whose life was run upon the Scriptural rule of doing as he would be done by, to whom the perversion of the same, recently popularised across the border, of "doing first unto others as you know they would do unto you" was beneath contempt ; only such an one could rise above the rivalries and jealousies of an overcrowded profession, and rising, passively rather than actively bring together and harmonise all that was best. Such an one was Graham. By his example as by his capacity as a consultant, a writer and a teacher, medicine in Ontario was set upon a higher plane. And this, it may be added, without adventitious gifts beyond a kindly manner and a wide culture, nay, despite a ceaseless sapping of his strength during long years by chronic disease. For his bearing was that of a student rather than of a leader

of men, his address direct rather than ready, and until one knew him he seemed wanting in humour. But the humour was there and was discoverable upon better acquaintance. Quietude rather than seriousness was its dominant note. This in part was attributable to native reserve, and in part it was the abstraction of those who think deeply ; but now that one knows the history of the last fifteen years one finds the explanation of a something which modified the rest,—that continent serenity of the strong man who, having for long gazed upon imminent death, has thereby gained strength of vision, and regarding life sees through its thin but baffling vestments the very lineaments.

Born at Brampton, Ont., Graham received his early education at Weston Grammar School and the Upper Canada College. Passing to the Toronto School of Medicine, in 1869, at the age of 22, he came out head of his year, receiving the University Gold Medal. The following year he became a resident physician at the Brooklyn City Hospital, and following upon this went to Germany, intending, we believe, to further continue his medical studies. But he arrived there at the time of the Prussian War, and on application was appointed and spent many months as surgeon without rank in the Prussian army. At the close of the war he went to Vienna where he more especially laid the foundations of his wide knowledge of dermatology ; after this he studied for a time in London. At the close of 1872 he returned to Toronto and entered general practice. The following year he married, and herein laid one of the main foundations of his after success ; for those who have been privileged to enter his household know how happy it was and have seen the unity which existed between husband, wife and children.

In 1875 he was appointed Physician to the Toronto General Hospital, and till the day of his death, although connected with other hospitals and charitable institutions, it was at the General that he did his best work as a clinician and as a teacher. About the same time he became attached to the staff of the Toronto School of Medicine as Demonstrator of Anatomy and Microscopy. Those who have read Osler's appreciative notice in the *British Medical Journal* of July 29 will recall the reference there to the Saturday mornings spent working with the microscope at Dr. Bovell's when he and Graham were students together. How much Osler valued those mornings is, I think, indicated by the fact that his Textbook is dedicated to Bovell along with Johnson, "Priest of the Parish of Weston, Ont." (where, as we have already indicated, Graham had his early education), and Palmer Howard, of McGill. These undergraduate studies in histology and morbid anatomy played no small part also in Graham's later success.

Gradually advancing from one position to another in the University, he was in 1887, at the reorganization of the Medical Faculty of the University of Toronto, appointed Professor of Clinical Medicine and Medical Pathology, as also Lecturer in Dermatology. In 1892 he became full Professor of Medicine and Clinical Medicine.

Both in connection with the University and the Hospital, he made his mark as a teacher; indeed, he and Dr. Grasset were the pioneers of bedside teaching in the General Hospital. Until this period hospital education there had been conducted along the system of instruction which only now is going out of vogue in the chief schools in the United States. As his practice increased he gladly gave up the attendance upon surgical and obstetrical cases and when his work further increased, so that attending to medical cases only he could not cope with them and at the same time study the cases properly, he gladly gave over much of his work to his friends, becoming, as before stated, a pure consultant. His election as Member of the Royal College of Physicians of London in 1893 was the authoritative indication of his determination to be consultant and consultant only. In this again he was the pioneer in Ontario. His work in medicine was recognized by his appointment as President in succession to the Toronto Medical Society, Toronto Pathological Society and the Canadian Medical Association, while again in 1886, along with Palmer Howard, Ross and Wilkins, of this city, he became one of the four Canadians among the seventy-five original members of the Association of American Physicians.

Of his published writings in medicine we may state he was the first to report cases of Acromegaly in America, while more especially he has made a mark in connection with diseases of the liver. It can, with confidence, be said that his article upon this subject, published in the Loomis-Thompson System of Medicine, is the best and fullest work upon this subject by a single individual that has been published in English since the time of Murchison. In Dermatological subjects, also, he has written much and well, and his position and standing in this specialty is recognized by the fact that he was made President of the American Dermatological Association in 1887. How wide were Graham's interests and how much he has contributed to Canadian medicine is shown in the accompanying bibliography for which we would express our indebtedness to his nephew, Dr. Hamilton, of Toronto.

No less than fifteen years ago symptoms of diabetes showed themselves. Living very quietly and cautiously without ever becoming in any sense hypochondriacal, Graham kept the disease in check for very many years. Beyond the fact that they could not but notice that he had of late more frequently and more easily succumbed to slight ailments, few of those who knew Graham well recognized that he was the victim of

chronic disease, for even till this last year he seemed never to spare himself in his work. During the last winter his health definitely failed, and in February he went to the Southern States hoping to recuperate. But following upon an attack of influenza in Baltimore, there came a broncho-pneumonia and, following upon this, slight pulmonary tuberculosis was detected. These two feared attendants upon the diabetic led to rapid loss of strength. Still in April he was able to return home to Toronto, and in May went to Gravenhurst, Muskoka, to the Sanitarium, which he had been largely instrumental in founding. There, upon the evening of July 6th, weakness followed by diabetic coma set in, and upon the afternoon of the following day he died, at the relatively early age—for those not medical men—of fifty-two.

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BY

R. MACNEILL, M.D., Stanley Bridge, P.E.I.

Delivered before the Maritime Medical Association, Charlottetown, July 12th, 1899.

HIGHER MEDICAL EDUCATION.

GENTLEMEN :

When, one year ago, in the historic city of Halifax, you placed me in the honourable position of President, I felt that after the eminent addresses which my predecessors in this chair had delivered there was nothing left for me to say. The choice of a subject is a matter of no little difficulty. Medical education, however, is one in which the profession of Canada is greatly interested, and this Association representing the Maritime Provinces of Canada, may consider the time opportune to review it, not only as it may interest the profession but the people in general. The profession for a long time felt our anomalous position in being hemmed in by provincial boundaries so that a doctor who was legalized in one province could not follow his profession in another without passing a rigid examination. To-day we witness the realization of reciprocity in the practice of medicine in these provinces and what has been accomplished here can be accomplished in all Canada. I need not refer to the oft discussed enactment, "The British North America Act" by which Canada was federated, leaving the question of education with each province. That matter is generally well understood. Medical education since the early days of the fathers of our profession has undergone many changes and no one will dispute the fact that the science of medicine has advanced notwithstanding the mighty opposition it has met with in its various epochs. It is somewhat unfortunate that when our profession will take a step in advance, many of the people view our actions with suspicion and particularly when we apply for

legislative enactments. No other profession is looked upon by the people in the same way. Account for it as you will, the public look upon us when trying to raise the standard of education with suspicion and distrust that it is a scheme to raise our fees. A little reflection would convince them that it is truly in their own interests and to protect their lives, and that mercenary motives are secondary with us while primary with the people themselves. Is it unreasonable that we should insist on a high standard of medical education? I think not. The Church precepts and text of the sacred volume require such a standard of education and a curriculum of seven or eight years including an arts course, and the people appear quite satisfied that it should be so. The disciples of Blackstone also require a high standard of education. The candidates must pass a preliminary examination and a course of five years. If the precepts and text of the sacred volume require such a standard of education, if the statutes of parliament and the common law require an equally high standard to interpret, what can be said against us requiring of our followers that they be educated men, when they have to deal with a constitution that is fearfully and wonderfully made? Instead of repulsive epithets we should be hailed by the people as benefactors.

There is no pursuit that calls for a larger display of the best qualities of human nature than the practice of medicine, and one of the most essential elements among medical men is a reputation for high qualifications and accurate knowledge of their profession. The great Dr. Pepper, when Provost of the University of Pennsylvania said "the vast improvements that have taken place in medical science, the additions to the positive knowledge of disease and of the means for its prevention and cure, the widespread interest among the community concerning all physical science, the prevailing sense of the supreme importance of private and public hygiene, the constantly increasing wear and tear of our complicated social life—all of these foretell the large part which our profession must play in the future and at the same time attest its power."

This covers the whole ground and is sufficient to vindicate our course. In order to convince the people and the profession that we are not travelling too fast, nor asking unreasonable things in our efforts to elevate the standard of medical education in Canada, let us briefly look at the state of medical education in other countries. Instead of being considered aggressive, it will be seen that we are but humble followers in this movement. Superstition and mystery are fast fading away and the feeling with which science and medical men are regarded has undergone an equal change in all countries.

THE GERMAN EMPIRE.—(Population forty-one millions.)—There are twenty-three universities which confer the doctorate. To matriculate,

the applicant must either present a certificate of a gymnasium or pass a preliminary examination upon Latin, Greek, German, history, mathematics and the elements of natural science. The course extends over four years of nine and a half months in each year. The right to practise, however, can only be obtained by passing the State examination which is conducted by a board composed of the professors of the different colleges appointed annually by the Ministry. The degree of Doctor has no special privileges attached to it, other than that it admits the possessor to examination for official position.

AUSTRO-HUNGARIAN EMPIRE.—(Population about thirty-six millions.) There are six medical schools all supported by the government. To matriculate, the applicant must present a certificate from a gymnasium. The course of study extends over a period of at least five years, of about nine months in each year. Examinations are held at the end of the second year upon the various subjects of the first two years ; and at the end of the fifth year upon the subjects of the preceding three years ; two or three months after the latter examination the candidate must pass a third and final one, which secures the diploma of Doctor of Medicine, with the right to practise.

RUSSIA.—(Population over eighty-five millions.)—There are eight medical schools in Russia. To matriculate, the applicant must have a certificate from a gymnasium. The course of study extends over five years with examinations at the end of each year. The arrangement of the course of study is similar to that of Germany. Upon passing the final examination upon all the subjects of the entire course the candidate receives the right to practise with the title of "Physician." To obtain the degree of M. D., he must have the above title and must undergo a written examination, and also present a thesis. There was formerly a third degree, M. D., C. M., obtained after an examination in surgery, but it is now becoming obsolete.

SWEDEN.—(Population four and one half millions.)—There are two universities and one academy all of which confer the license to practise. To matriculate, the applicant must present a certificate from a gymnasium. Three years after matriculating the student is required to pass the medico-philosophical examination which includes physics, chemistry, mathematics, botany, zoology, and comparative anatomy. Three years later he must pass the examination for the academic degree of candidate in medicine which includes anatomy, physiology, physiological-chemistry, general pathology, pathological anatomy, and pharmacology. Four years later he must pass a final examination upon practical medicine and surgery, obstetrics, ophthalmology and medical jurisprudence. Upon passing the above examinations the candidate receives the right to practise. Attendance upon lectures is not obliga-

tory but the student is obliged to attend clinics for one and a half years. The course of medical studies is thus not less than ten years.

NORWAY.—(Population nearly two millions.)—The only medical school is in connection with the University of Christiana. To matriculate as a medical student the applicant must pass two preliminary examinations, one in arts, including Norwegian, Latin, Greek, French, German, English, mathematics, geography, and history, and one in philosophy, including geometry, zoology, botany, astronomy and the elements of chemistry and physics. He then enters upon the study of medicine proper, which on an average occupies six and three-quarter years. There are three examinations arranged as follows : 1st examination held two and a half years after matriculation, upon anatomy, dissection, use of the microscope, histology, chemistry (organic and inorganic), zoology, and botany. Second examination held three and a half years after the first upon physics, pharmacology, toxicology, medicine, therapeutics, general pathology, and pathological anatomy, surgery, ophthalmology, dermatology and syphilis. Third examination held about one year after the second, upon surgery and bandaging, topographical anatomy, obstetrics and gynaecology, diseases of children, forensic medicine, hygiene, and a practical examination in medicine and surgery. Thorough practical work in connection with the various hospital wards is also obligatory. Upon passing the examinations, which are conducted by the faculty, the candidate receives the right to practise. The doctorate is a scientific degree, giving the right to lecture at the university, and can be obtained only by passing a very severe examination.

DENMARK.—(Population nearly two millions.)—Has one medical school in connection with the University of Copenhagen. To matriculate, the candidate is required to present a certificate from a recognized literary institute, and must then attend a course of two years upon zoology, botany, physics and chemistry, including analysis. After passing the examination on these subjects, he is admitted to the course of medicine which extends over five years. The degree of M. D., with the right to practise after the final examination, is then conferred.

FRANCE.—(Population thirty-six millions.)—There are six academies conferring degrees and sixteen preparatory medical schools. To matriculate at an academy, the candidate must have the degree of B. A. and B. Sc. The course extends over four years of ten months in each year. In addition there are required practical laboratory work, and clinical work in connection with the hospitals, for two years. This may be done either the last two years of the course or the last year and the year following. There is a practical examination at the end of each of the three first years, and at the close the final examination for the Doctorate consists of five parts, including all the subjects of the course, together with the presentation of a thesis.

HOLLAND.—(Population one and a half millions.)—Has three universities supported entirely by the State. To matriculate at a university the applicant must present a certificate from a gymnasium or undergo an equivalent examination. The course extends over six years. The right to practise is not conveyed with this degree, but can be obtained only by passing an examination before a special board consisting of eight professors appointed annually by the government.

BELGIUM.—(Population over five millions.)—Has four universities two of which are supported by the State. To matriculate, the applicant must be a graduate of a literary college or pass a thorough preliminary examination. The course extends over five years and includes practical laboratory work, operative surgery, and attendance for three years upon clinics in medicine, surgery and obstetrics. The examination for the degree of Doctor of Medicine is held a few weeks after the close of the course, and includes the general subjects of the course, together with practical examinations in clinical medicine, surgery, obstetrics, and in operative surgery. This degree is conferred by the universities, but the diploma must be legalized by a Government Commission, whose duty it is to ascertain if all the conditions exacted by law have been complied with.

GREAT BRITAIN.—There are nineteen medical schools, ten, namely the universities, confer the Doctorate. The remainder bestow the various titles of licentiate, member and fellow. To matriculate, the applicant must either possess a degree in arts of some recognized collegiate institution, or must pass the prescribed preliminary examination. The course has been extended to five years. During the attendance at an hospital the student must serve as clinical dresser for three months, and as clinical clerk for three months. The examinations are two in number, partly written and partly oral. The examinations are quite rigid and are conducted by a board composed of professors and of others having no connection with the college. Upon passing the final examination the candidate receives the right to practise, with the title (differing in different schools) of licentiate, member, fellow, bachelor of medicine, bachelor of medicine and master of surgery, or doctor of medicine. In Edinburgh the degree of M.D. is only to be obtained after first having taken a degree both of bachelor of medicine and master of surgery, and after having devoted two years to actual practice. No special examination is required but the candidate must present a thesis. The higher titles such as F. R. C. S., F. R. C. P., and M. D., have no privileges attached to them outside of the college granting them, excepting that they are requisite for appointment on the staff of hospitals of any reputation. The medical profession in Great Britain enjoys that degree of estimation and credit which a science (conferring on mankind the greatest of all comforts) justly deserves. We find that the physicians and sur-

geons of Great Britain are almost invariably men of liberal education and cultivated minds and the art of medicine is carried to a singular height of excellence.

AUSTRALIA.—(Population about two millions.)—There are two universities, one at Melbourne and one at Sydney. Before matriculation the candidate must pass a rigorous examination in languages, mathematics, etc. The course of medical study extends over five years of nine months a year, and includes thorough practical work in laboratories and in hospital wards. The examinations are both written and oral. The final examination includes all the subjects of the fourth and fifth years with practical tests in dissection, operative surgery, clinical surgery, and medicine. Candidates are required to pass in all subjects. The degree of M. B. with license to practise is then given. To obtain the degree of M. D., which is a title merely conferring greater professional prestige, the applicant must have taken the degree of M.B. and subsequently have passed two years in hospital practice or five years in private practice, including in either case attendance for three months on the practice of an hospital for lunatics, and must also pass a special and elaborate examination both theoretical and practical in character.

ITALY.—(Population about twenty-nine millions.)—There are seventeen universities, four so-called free universities and one academy. To matriculate, the applicant must possess a certificate from a lyceum which is a high grade of literary institute. The course of medical study extends over six years of nine and one-half months in each year. There are three examinations held at intervals of two years by a commission composed of professors with one of two associates having no connection whatever with the schools and nominated by the government.

Excellence in one or more branches is not allowed to compensate for failure in others. Upon passing a second examination at the end of the fourth year the student receives the title of licentiate, which is merely an academic distinction. The final examination at the end of the sixth year includes not only all the subjects of the entire course of study, but also the diagnosis and treatment of medical, surgical and obstetric cases. Upon passing this examination and presenting a thesis, the candidate receives the degree of Doctor of Medicine and Surgery with the right to practise.

PORTUGAL.—(Population four millions.)—There are three medical schools all supported by the government. The course extends over five years of nine months each. To matriculate, the applicant must pass an examination in Latin, Portuguese, French, English, mathematics, elementary physics and chemistry, natural history, logic, history and geography.

BRAZIL.—(Population about twelve millions.)—There are two uni-

versities, requiring a rigid preliminary examination. The course extends over a period of six years. Upon passing the final examination, which embraces all the subjects of the course, and upon the presentation of a thesis, the candidate receives the degree of Doctor of Medicine, with the right to practise.

VENEZUELA.—(Population about two millions.)—There are two universities. To matriculate, the candidate must have the degree of bachelor of philosophy. The course extends over six years.

CHILE.—(Population two and a half millions.)—Has one medical school. The applicant must have a diploma of a collegiate institute to matriculate. The course extends over six years.

SPAIN.—(Population about seventeen millions.)—There are three medical schools. To matriculate, the candidate must have the degree of doctor of philosophy. The course of medical study is four years.

CUBA.—(Population was about one million.)—Has one university. To matriculate, the candidate requires to have a degree in arts. The course extends over six years.

UNITED STATES.—(Population about seventy millions.)—Has one hundred and six medical schools, with different regulations in each state. The leading States of Pennsylvania, New York, Massachusetts, and some others have State qualifications, so that a diploma serves only as a mark of literary distinction, and no longer gives the holder thereof the right to practise. Too many schools have lowered the standard in that country, but now the leading schools of the regular profession have a graded course of four years of nine months, and a preliminary examination.

CANADA.—Our beloved Canada, with a population of about five millions, has eleven medical schools. I need not refer to the collegiate course in this country. The colleges have been doing good work, and always followed in the wake of improvements. For years past the Canadian Medical Association has been endeavoring to educate the people as well as the profession on the necessity of having one qualification for all Canada. At the last meeting at Quebec, the basis of uniformity of curriculum was agreed upon, and the matter entrusted to Dr. Roddick to perfect and complete. We look to him as the Cæsar to lead us across the provincial Rubicon, and have established in Canada—what? the University of Canada, or the College of Physicians and Surgeons of Canada, or the Dominion Medical Council? Dr. Roddick has issued an address, in which he very ably set forth his views as follows:—

“By an Act of the Dominion Parliament, a corporation may be created called, let us say, The Dominion Medical Council, which would be composed of medical practitioners from each Province and from the North-West Territories. The principal function of this Council would

be to register all persons who have complied with certain requirements and all applicants who shall have complied would receive what might be termed Dominion registration by the Council."

As we are aiming at making the profession in Canada one body, with one legal qualification to practise, thus placing it as high as any other country, it behoves us to commence with a high standard of preliminary education. Men entering the profession with a low standard will be equally low in the estimation of the profession and of the public. They are the class who sell patent nostrums and show cleverness, not commercial but professional. Some of these are so clever that they do not require to see their patients. We have at least one on our register who pretends by the signs of the zodiac and the date of birth to tell the dispositions of his patients and in this way impress his great skill on the easily impressed minds of his patients. In the face of the bold and unblushing quackery which we witness there is great need of higher medical education as being truly in the interest of the common people, as they are the ones who will suffer most by ignorant pretenders in medical science.

The profession of medicine in Canada will be what its followers aim to make it. The duty of maintaining its sanctions, and its higher standard must devolve upon those who practise it. The Government of the country has done nothing for the cure of the diseased, although thousands and millions of dollars are expended on other objects. True they establish quarantine hospitals. Good government has for its object the happiness of its subjects, and while we find laws regulating education and morals, etc., it is a sad reflection on the wisdom of our legislatures that no endowment or appropriation is made for training men for curing diseases. Let every obstacle arising from ignorance of the human organism and the diseases to which it is subject be removed by a thorough medical education, and let no one be permitted to treat the human frame who is not well grounded in everything pertaining to its anatomy, physiology, and the nature and properties of the medicines for the cure of its diseases, in addition to a full knowledge of all the sciences bearing upon this wonderful organism. There is no profession which should embrace a wider domain of science. When we consider the jealous eye with which life and property is regarded in all civilized countries, and witness the precautions that are taken on steamships and railways, we wonder that any obstacles should be placed in our way by the very people we are trying to serve when we appear before them advocating higher medical education. To attain this object to-day the Federal Government must be approached. Whether we form the Dominion Medical Council or the University of Canada, the Federal Parliament should appropriate an annual sum to support and carry it through. The united

voice of the profession behind Dr. Roddick in Parliament will do much in this matter and help the consummation of our desires. In order to be worthy of the name of Canada it should be a State University or a State Council created and supported by the Federal Parliament. A diploma from such a body whether for a degree carrying with it the right to practise, or for membership, would be respected the world over. You could gain admission with it to the British Register, and the existence of such would serve as an object lesson to our cousins across the border.

Brethren, we must be united as one man, and it is a duty incumbent upon us to lay a good—a lasting foundation, and thus leave a legacy to our successors, which shall be as permanent as the everlasting hills. Like globules of quicksilver dispersed over a polished surface, so long as we have been separate we have been easily agitated and unquiet, but just as those globules, so soon as they come within the sphere of each other's attraction, however varying their size, are fused together into a common mass, so let us fuse and consolidate ourselves. On equal terms each and every province must unite to form a central organization which shall have the status and distinction of a legislature. The first principle dictated by political wisdom is this, that those fundamental rules be observed which natural justice inculcates as the proper groundwork of all social institutions. If these are violated or neglected, oppression will take place, and our members will become more and more dissatisfied. We live under a protectorate where the humblest and poorest subject may carry his complaints to Parliament ; if once the united sense of our profession be decidedly formed and permanently expressed concerning the injustice or impolicy of any particular law, our voice will reach every branch of the Legislature, and obtain that change in the system which moral duty and the general welfare demand. It is thus that improvements have been made in the constitutions of nations for centuries past, and it is thus, we trust, they will continue to be made for centuries to come.

The approaching meeting of the Canadian Medical Association at Toronto is destined to be an important one. Every Council in the Dominion should be represented, as it is likely this meeting will be the last one at which the question will have to be considered. The tendency of the age is to have a five years' course, as it is in England, and for the completion of an arts course to be insisted upon as the requirement for matriculation.

The basis of agreement last year at Quebec required the B.A. degree or an academic first class teacher's licence, the latter being the same as an honour Diploma of the third year in the Prince of Wales College. Our Prince Edward's Island Legislature, pretending to be wiser than we, rejected that provision and substituted an ordinary teacher's licence

of the first class, a qualification deficient in Latin, Greek, English, French, geometry, algebra, statics, dynamics and practical chemistry. Very likely the whole question will have to be considered again and the Legislature will be asked to repeal the words "First Class Licence" in the P. E. Island Medical Act. College degrees can only be accepted as an acknowledgment of purely scientific attainments ; they secure no professional rights to-day in any of the Provinces of Canada, and at the close of a university education a State examination is required in each Province. The practitioners of medicine in Canada should be free and legalized to practise their profession from the surging billows of the Atlantic to the placid waves of the Pacific, and as God's chosen, permitted to go forth to do battle with disease and death. Let our aim be to consolidate the profession under one head by Dominion Registration. In conclusion, I desire to say that so long as the foundation of our profession is science, and its end the good of mankind, let us not rest content until we place it on the highest plane with that of the foremost country and make it creditable alike to the profession and the people of Canada. If I have failed to add due interest to the theme, I can but ask that you will spread the mantle of your charity over my imperfections. Gentlemen, I thank you for your kind and courteous attention.

COMPLICATIONS AND TREATMENT OF FRACTURE OF THE BASE OF THE SKULL.*

BY

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I intend only to speak of the "Complications and Treatment of Fractures of the Base of the Skull"; and even to do that briefly will, I fear, tax your patience quite enough, leaving aside the much wider, and vastly more interesting, subject of Fractures of the Skull in general. My reason for taking up this subject was, primarily, that I had under my care this summer, in my wards in the Montreal General Hospital, a rather remarkable series of Fractures of the Base—remarkable in the fact that no fewer than five were there at the same time, affording opportunity of comparative study—and also remarkable for the further fact, that they all recovered. I do not say this boastfully, for several of them should have died to preserve my prognosis. This series of cases, naturally, made me study up the subject of Fracture of the Base as I had never done before ; and the good results of the routine treatment followed made me wonder whether we—as general practitioners—have not been too prone in the past to assume that this was a form of injury for which any treatment was useless, and that all we should do was to make a correct diagnosis, give a grave prognosis, and then fold our hands and await the result. Such an attitude, I maintain, in these aseptic days is quite as unjustifiable in the case of a fracture of the base of the skull as it would be in a compound fracture of the tibia, for instance.

I crave your permission to now refer shortly to the following seven cases of the injury under discussion, as I have excluded the cases of fracture of the vertex, which did not show any symptoms of having extended to the base.

Case I. Mabel S., aged 8, was brought to the Hospital on May 30th, unconscious, the result of a fall of 15 feet, striking head first. There was a large hematoma over left parietal bone, and also a depressed fracture above left ear. Blood was oozing from mouth, nose and left ear: pupils widely dilated: convulsive movements of left side of body, but no movements of right side. Pulse weak and compressible, face pallid, and respirations shallow. She shortly began to vomit small quantities of bright red blood and rapidly grew weaker. Examination with

* Read before the Canadian Medical Association, Toronto, August 31, 1899.

a laryngeal mirror showed blood dropping down from the vault of the pharynx, which would collect in the stomach, and be rejected from time to time. So that, in addition to the fracture of the parietal bone (or as a continuation of it), there was fracture through the middle fossa of the skull, involving both the ear and the naso-pharynx. As the child was bleeding to death, possibly from rupture of the middle meningeal artery at, or near, the foramen spinosum, I felt that something had to be done at once. I remembered some years previously helping my senior colleague, Dr. Shepherd, operate upon a case of fracture of the skull, in which he could not reach the point of bleeding from the meningeal artery, which was evidently ruptured at the foramen spinosum, and he very cleverly saved his patient by ligating the common carotid artery of that side. You will find the case reported at length in the *Brit. Med. Journal*, Vol. I., p. 905, 1896. It occurred to me that I should follow the same rule here, especially as my little patient was in no condition to stand any prolonged operation on the skull or brain. I hurriedly ligated the left common carotid artery and put the patient to bed. She was absent from the ward, in the operating room, only half-an hour. She regained consciousness on the third day. She developed thrombosis on the twelfth day; first of the superior longitudinal sinus, followed, on the sixteenth day, by thrombosis of the left cavernous sinus, and, a little later, of the right cavernous sinus. The study of the various forms of squint thus produced was most interesting. These were the only untoward incidents in her recovery, as the depressed fracture of the parietal bone righted itself, as such fractures so often do in children. She left the hospital, perfectly well, in 26 days, and continues well. I show you a photograph taken four days ago.

Case II. George W., aged 36, was brought to the hospital on May 31st, having fallen down a hoist shaft. He was bleeding from right ear, nose and mouth, conscious, but complaining of great pain in the head. He had also a compound fracture of the right lower jaw, and two punctured wounds of the neck, one going into the mouth. The wounds in the neck were dressed and sutured, and a splint applied to the broken jaw.

In addition to dressing the wounds of the neck and of the mouth caused by the broken jaw, I gave precise instructions regarding cleansing and keeping as aseptic as possible all the cavities affected by the fracture of the base, and I shall detail these instructions later on, as they pertain to all these cases.

The patient convalesced rapidly, never had any fever worth mentioning, and left the hospital in eighteen days with all his wounds healed but a splint still on the broken jaw, which had quite united a little later.

Case III. Mrs. W., aged 31, on June 15th jumped from a moving elec-

tric street car, and struck her head on the pavement. On admission, blood was oozing freely from her right ear. Four inches above the occipital protuberance and one inch to the left of the sagittal suture, was a lacerated and contused wound of the scalp leading down to a depressed fracture of the skull (posterior part of left parietal bone). Two weeks previously she had been confined, and was in active lactation. She was dull and stupid, difficult to arouse, with both pupils dilated and sluggish to light. She vomited frequently, a slight trace of blood being found in vomited matter. The wound in the scalp was sutured and dressed but no effort was made to raise the saucer-like depression of bone underneath. The ear and nose were treated in the usual way, and the usual routine of diet, rest and cold applications to the head followed. The vomiting was most troublesome, and the patient was very weak before it ceased, having ejected a good deal of blood, the source of which I could not make out but suspected it entered the pharynx through the right Eustachian tube. Her temperature never went above 101° F., and she made a good recovery, being conveyed home on the eleventh day. I have since seen her, and she complains of nothing as a result of her accident.

Case IV. P. M. K., aged 43, was brought to the hospital by the police patrol, which had found him unconscious in the street. He was semi-conscious, inclined to sleep at times, and wildly delirious at others. He was in the ward for a week before we could find out his name or get any information whatever about him. Blood was trickling from both ears, and from nose and mouth. He vomited blood at different times in small quantities. He had paralysis of all muscles supplied by the left facial nerve, which was evidently involved in the Fallopian aqueduct. Closer examination showed a slightly depressed fracture of the left parietal bone, about one inch above the left ear. The ears, mouth and nose were treated as usual and ice was applied to the head. He was very delirious for a week, and suffered from retention of urine for several days. His mental condition then quite suddenly improved, but he still had deafness and facial palsy when he left the hospital in three weeks. Dr. Stirling, assistant oculist and aurist of the hospital, reported rupture of both drum heads, and did not hold out much hope of regaining hearing in the left ear, as he feared the portio mollis of the seventh pair of nerves had suffered with the portio dura and was involved in some scar connected with the fracture through the petrous portion of the temporal bone. His temperature while in hospital never rose about 100° F.

Case V. L. C., aged 37, was brought to hospital unconscious, smelling strongly of alcohol, with both pupils dilated, right more than left, and blood oozing from the right ear, nose and mouth. There was a scalp wound over the occiput, but no fracture of the skull underneath; the left nostril torn open to the cheek; flesh wounds of the right hand and

right shoulder. The wounds were sutured, after cleansing, and then the cranial orifices treated as usual. For three days he was delirious, and the temperature rose to 101° F. on the fourth day, but then rapidly got better, and he left the hospital very well in eleven days.

Case VI. A. G., aged 29, was brought to hospital on July 23rd, having fallen from a moving train and struck on the head. Blood was flowing from the nostrils and left ear, and a very large hæmatoma was present over the right temporal and malar regions involving the right orbit. He was unconscious and vomiting blood occasionally. Bell's palsy of the left side of face, but no other evidences of paralysis. Breathing stertorous. The usual orders as to treatment were as well carried out as a public hospital ward would allow, and the patient made a rapid recovery, unconscious delirium being followed by intelligence and quiet, and the facial palsy disappearing. In fifteen days he was discharged, apparently perfectly well, but with the usual caution not to work hard or excite himself for another month. The temperature in this case never rose above 99° F., though he was wildly delirious for two nights, and had to have several hypodermics of Battley's solution.

Case VII. O. S., aged 21, was brought to hospital on the night of August 1st, semi-conscious, the result of a fall on his head into a culvert, and bleeding freely from the nose and left ear. The usual treatment was followed. He complained of great pain in the head, worse at night, and in spite of sedatives was very noisy. He began to improve on the fourth day, and on the sixth day his brothers insisted on his removal from hospital, and I have since heard that he made a good recovery.

In all these cases the following general plan of treatment was followed out as systematically as circumstances would allow :—

1. Rest in bed.
2. Quiet was enjoined, and preferably the patient should be kept in a dark room. In the private cases, only, could this be done.
3. An ice bag was kept to the head.
4. The affected ears were thoroughly syringed out with carbolic acid solution 1-60, and packed with iodoform gauze, over which was bandaged a pad of sterilized cotton wool. This was repeated as often as the cotton wool showed any moisture. The nose was sprayed every four hours with the following, taken from the Montreal General Hospital Pharmacopœia :
 $\mathcal{R}$ Sod. biborat., sod. bicarb. aa. grs. iii, acid carbolic gr. i, glycerine $\mathfrak{z}$ i, aq. ad $\mathfrak{z}$ i. Sig. Use in the atomizer. In addition, the nostrils were plugged with sterilized absorbent cotton changed frequently.

Where a mouth wash and gargle could be used and was indicated by involvement of the vault of the pharynx in the fracture, the following was used every two hours :— $\mathcal{R}$ Pot chlor. gr. xlv., acid hydrochl. m. xx, glycerine $\mathfrak{z}$ iv, aq. destillat ad $\mathfrak{z}$ x. Sig. As a gargle and mouth-wash.

5. The diet was strictly fluid, and in many cases of unconsciousness, food was given *per rectum* for several days—peptonized beef juice and egg, with a little brandy, yielding very good results, given in this way every four hours. It is, I think, highly important to carefully nourish these cases of fracture by suitable diet.

But the question may naturally arise, can one always be sure that one has a fracture of the base to deal with. I cannot answer this better than by quoting a recent utterance of a London surgeon on this subject : “The signs of a fractured base are exceedingly equivocal, and it is often only by a consideration of the whole picture that a certain diagnosis can be made.” (Rose & Corless Surgery, 1898, p. 464).

If one has, following severe injury to the head, (1) evidences of severe brain injury ; (2) bleeding from the cranial orifices which communicate with one or more fossæ of the skull ; and (3) if the presence of cerebro-spinal fluid can be demonstrated in the discharge from any of these orifices, it seems to be fair to conclude that one is dealing with a fractured base. More especially is this true if one finds, at the same time, a fracture of the parietal or temporal bones, as so often happens. These fractures of the vault, I am convinced, often extend to the base, but being linear and not compound, they require no treatment and so escape notice.

What are the dangerous complications of fractures of the base of the skull ?

1. *Hæmorrhage*.—The fracture may easily tear the dura mater and open some of the large venous sinuses, with fatal effect. This accounts for the great fatality following fractures of the posterior fossa of the skull (the drainage basin), as compared with either the middle or anterior fossa. Hæmorrhage, too, may also result (as in No. *I.* of the above series) from the fracture involving some of the arteries entering the base of the skull. The treatment must be directed to the control of this by any and every means possible.

2. *Sepsis*.—The fracture may become compound, opening into some of the cranial canals which communicate with the outer air ; for example, the external auditory meatus, the Eustachian tube, the nose and nasopharynx. Most fractures involving the middle and anterior fossæ of the skull communicate with some one or other of these cavities, and so are just as truly compound as the end of the tibia sticking through the skin, and here it is that modern antiseptic surgery should, and I claim does, give us good results when faithfully and intelligently applied. If the cracked skull is kept aseptic by proper treatment of the road leading to the site of fracture, it will heal as kindly and with as little constitutional disturbance as any other bone treated in the same way. It is not enough in these modern days, when one sees a patient who has received a severe

blow on the head, and has blood pouring from ears, nose and mouth with evidences of severe brain mischief, that the medical man should say : "Poor fellow ! A fracture of the base of the skull, I fear. Keep him quiet, and leave him alone." These fractures must be treated ; the hæmorrhage must be stopped, and to do this a careful search should always be made for its source.

I should certainly have lost the first of the above series of cases had I not taken this precaution, for there was very little external bleeding in her case, and yet she was really bleeding to death into the gullet. Having controlled the hæmorrhage as far as possible, our energies should next be turned to rendering the site of the fracture as aseptic as possible and adopting means to keep it so. Cleanse the cavity affected, and keep it clean by frequent washings and, where possible, by closing with some antiseptic absorbent dressings. Then the germs in the air will not be able to gain access to the fracture, and thence into the cerebro-spinal fluid or the venous sinus, causing subsequent septic meningitis which will nearly always be fatal.

Especially should one cleanse the external ear and keep it dressed antiseptically. This should be done on the affected side, even when no blood is issuing when you first see the case. The blood may be accumulating in the middle ear and escaping through the Eustachian tube and may later rupture the drum membrane and escape through the external meatus. Spray or douche the nose and naso-pharynx carefully, and then close the nostrils with cotton wool. Remember that the upper chambers of the nose communicating with the ethmoidal and frontal sinuses, are, fortunately, generally fairly sterile. And finally, use an antiseptic mouth-wash as frequently as possible. Control vomiting if at all possible. It is bad in many ways. It increases intra-cranial blood pressure, and thus encourages hæmorrhage ; and it is very apt to drive septic material into the posterior nares and the Eustachian tubes. Give nothing but liquid diet ; feed entirely by rectum for a few days, if necessary, and do not be afraid to give opium hypodermically or by rectum if the patient is violent and restless as they generally are in cases of brain injuries. I know there is a general prejudice against the use of opiates in these cases, but I have seen nothing but good follow the use of opiates where indicated, and think the patient quieted by opium has a much better chance of recovery than the patient who is wildly delirious ; and, above all, keep the patient from all excitement, whether of sight, sounds, or mental agitation. Do not allow a lot of anxious friends to ask the patient all sorts of questions ; exclude the pettifogging lawyer who is so anxious to take his case. There is nothing in what I have said that may not be carried out by any medical man living in this country, and cases in private practice should get on even better than those in a large emergency hospital ward with its noise, bustle and light.

PNEUMOTHORAX FROM GAS-PRODUCING BACTERIA.*

BY

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The presence of gas in the pleura without perforation is an old question with medical authorities. Lannee believed that a secretion of gas could take place in a healthy pleura, and although this view was considered untenable for a long period, yet subsequent writers have regarded it as probable that an evolution of gas may occur in certain pathological conditions. Senator† states his views on this subject very clearly. He considers that the gases held in solution by fluids in the pleural cavity may escape in accordance with physical laws, provided that the pressure is diminished by retraction of the lung, but that such an amount can only be inconsiderable. Further, however, he considers that purulent fluids undergoing decomposition in the pleura can evolve gases. This argument is supported by the facts that subcutaneous emphysema may occur in a limb in the absence of any external wound, and also by the presence of gas occasionally noted in phlegmons.

It is, however, only within the last four years that any facts have been brought forward placing such views on a scientific basis. Welch's‡ discovery of the *bacillus capsulatus aërogenes*, followed by numerous pathological observations, remove all doubt as to the production of gas in living tissues by bacteria. In one of Welch's cases pneumo-peritonitis was present without perforation. A large number of his cases involved the abdominal organs (12 out of 23.)

The following case, although primarily one of subdiaphragmatic abscess rupturing into the pleura, is a good example of a pneumothorax due to gas production by the *bacillus coli*.

J. W., æt 46, a deaf-mute, was admitted December 26th, 1898, to the surgical side of the Montreal General Hospital for sudden severe pain in the abdomen, which his physician regarded as appendicitis. Dr. Hutchison, under whose care he was placed, found no evidence of abdominal disease but some days later discovered signs of fluid at the right base, and on aspirating some clear serum was removed. He was transferred to the medical ward on January 24th, and his condition was noted as follows :—

The patient is emaciated, anxious and prostrate; the skin dry and

* Read by title at the Canadian Medical Association, Toronto, September 1, 1899.

† Senator, *Deut. Zeit. fur Med.* II.

‡ Welch and Flexner, *Journal of Exp. Med.* 1.

hot; temperature, $99\frac{4}{5}^{\circ}$ F. a.m., $101\frac{1}{5}^{\circ}$ F. p.m.; respiration labored 40; the breath foul, pulse 110 and readily compressible.

On physical examination there is distinct fulness over the right side of the thorax. The percussion note anteriorly is normal to the fifth rib, but from here to the costal border it is loud and hyper-resonant; the axilla is clear and posteriorly there is dulness at the base, as far as two fingers' breadth. The line of dulness is arched, reaching higher in the middle than at either side. Distant metallic respiration is heard over a small area the size of the palm of the hand in the upper axillary region, and very feeble breath sounds over the dull area posteriorly. Over the remainder of the lung the breath sounds are slightly feeble. A distinct metallic coin sound is elicited over the area of metallic breathing, and also through to the back, and there is distinct succussion. The breath sounds are slightly enfeebled over other portions of the lung.

On the 28th an aspirating needle was introduced in the 8th space posteriorly and twenty ounces of almost pure blood drawn off, which coagulated immediately in the bottle. The physical signs remained much as before but the metallic respiration disappeared. The further progress of the case was progressively downwards. The prostration increased; the temperature continued moderately elevated 100° , 101° , once 102° ; the pulse became rapid and weak, and death took place from exhaustion on February 4th.

Repeated examinations of the rather scanty sputum always failed to show tubercle bacilli.

Abstract of autopsy performed by Dr. Wyatt Johnston:—

Body considerably emaciated.

Dense adhesions between upper surface of the right lobe of the liver and the diaphragm. On pouring water over the pectoral muscles near the axillary line a few bubbles of gas escape on piercing the chest wall.

The right pleura shows some adhesions anteriorly and in the axilla, whilst below it is densely adherent and nearly a quarter of an inch thick. There is a thick-walled sac in the pleura posteriorly containing fetid pus. After removing the organs *en masse*, this cavity is found to communicate by an opening admitting a finger with a space between the right lobe of the liver and the diaphragm, and which contains pus similar to that in the pleura. There is no communication between either cavity and a bronchus, as tested by air and water pressure. There was an acute splenic tumor, but otherwise the abdomen was normal, the appendix and its neighborhood being free from disease. Bacteriological examination showed a mixed culture consisting principally of the bacillus coli with proteus.

The diagnosis during life was that of a localised pneumothorax at the base of the lung. The cause of this was, however, very obscure. There

was no evidence of tuberculosis of the lung, bacilli being constantly absent from the sputum. The possibility of a pyopneumothorax sub-phrenicus was considered, but against this was the absence of any downward displacement of the liver and, in addition, the heart was displaced to the right, a sign which is said to be commonly absent in collections below the diaphragm.

The conditions actually found were rather peculiar. An old thick firm abscess wall was seen, bounded below by the liver and above by the diaphragm. This cavity had no communication with any of the hollow abdominal viscera, nor was any source of such an abscess discovered in the abdomen. The lung, which had been pushed up, had formed a circular ring of adhesions on its pleural surface to the chest wall, dividing the pleural cavity into an upper and lower chamber. The latter communicated by a perforation in the diaphragm with the sub-diaphragmatic abscess which had hitherto been latent.

That the presence of gas was not due to any communication with any of the hollow abdominal viscera is clearly shown by the anatomical conditions, and the presence of a gas-producing bacillus, the bacillus coli, seems the only explanation of the presence of gas in the pleural sac.

So few cases have hitherto been reported of pneumothorax resulting from gas-producing organisms, that a synopsis of three previous cases may be given.

Levy,* writing in 1895, describes a case in a man aged 48, beginning with cough, pain in the left side and fever. Examination showed a left sided pleurisy. After four aspirations, three months after the onset of the illness, there was evidence of pneumo-thorax. Owing to dyspnoea the operation for empyema was performed, but the patient sank and died.

At the autopsy there was bilateral pleurisy and pericarditis with 1.5 litres of reddish yellow fluid in the right pleura, and in the upper third of the right lung a firm focus, the size of an egg, containing whitish caseous masses. A small yellow nodule was present on the small intestine, and a number on the under surface of the diaphragm. The pleuritic exudate removed during life showed the presence of an anaërobic bacillus, identical with that previously found by Fränkel in gas phlegmons and subcutaneous emphysema and subsequently identified as Welch's bacillus capsulatus aërogenes. The bacillus produced gas both in cultures and in living tissues.

This case seems, then, to have originated as a tubercular (?) pleurisy with effusion, subsequently infected with the bacillus aërogenes.

A. G. Nichols,* of Montreal, has recorded a case which is less open to

* Levy, Ueber den Pneumothorax ohne Perforation, Arch. für Exp. Pharmakologie, Bd. 35, 335.

* Nichols, Notes on some cases of infection by the bacillus aërogenes capsulatus, British Medical Journal, 1897, II., p. 1845.

criticism than any that have been published yet, inasmuch as gas developed in the pleural and pericardial cavities.

The patient, a male, æt. 21, was admitted to the Royal Victoria Hospital for severe abdominal pain, beginning six days previously. There was evidence of peritonitis and a diagnosis of perforative appendicitis was made, which was confirmed by operation. A left-sided pleurisy was present on admission, and four days later evidence of pneumonia, and a few days later right pneumothorax and pneumopericardium were distinctly recognised. Septic symptoms were present but there was no sudden pain or collapse as is commonly found in perforative pneumothorax. No communication was present between the abdominal and thoracic cavities, and the case was thus clearly one of gas production in the pleura and pericardium. The autopsy fully confirmed the above conditions, and the bacillus capsulatus *aërogenes* was subsequently discovered in sections stained by Gram-Weigert's method. Anaërobic cultures were not made, as the case occurred previous to Welch's publication.

May and Gebhart.*

A male, æt. 43, stabbed himself twice in the cardiac region, with a dagger which had been previously used on another for a similar purpose. The wounds were apparently trifling, and healed quickly, but the temperature remained elevated and signs of fluid developed in the left pleura, and on aspirating a quantity of cloudy and markedly hæmorrhagic exudate was drawn off. A fortnight after the wound occurred evidence of pneumothorax was distinct. The gas when drawn off lit with a bluish flame.

Pericardial exudation developed, and in spite of incisions into both the pleura and pericardium, the patient died.

The autopsy confirmed the diagnosis, the anatomical diagnosis reading :—Subacute, left-sided, purulent pleurisy and pericarditis, following a stab in the left side.

The bacillus coli and staphylococcus pyogenes were found in the exudate. Careful analysis of the gas from the pleura showed that it consisted of CO_2 , H, & N, but no O. The presence of a gas (H) not contained in atmospheric air proves clearly the production of gas in the pleural cavity.

In all of these four cases the proof that gas was evolved by bacteria is very conclusive, and it may therefore be accepted that such an event occasionally occurs. That such cases are rare is evident by the very scanty literature on the subject, but like other rare conditions, it may be more frequently found if looked for.

In two cases the bacillus *aërogenes* capsulatus was present, and in two

† May and Gebhart, Ueber Pneumothorax durch Gasbildeads Bakterien, Deut. Arch. für Klin. Med., Bd. 61, p. 323.

the bacillus coli. With our present scanty knowledge on the subject it is difficult to establish satisfactorily any diagnostic points. It will be noticed, however, that in three of the four cases there was abdominal disease, and in the remaining one the origin seems to have been a wound infection. In Nichols' case the evidence of abdominal disease (appendicitis) was distinct during life. In Levy's case there was tuberculosis of the peritoneum, discovered only at the autopsy, and in my own the subdiaphragmatic abscess was doubtless infected by the bacillus coli from the intestine. The frequency with which the abdominal organs are affected by the bacillus capsulatus aërogenes, and the constant presence of the gas-producing bacillus coli in the large intestine, are in accord with the clinical features of three of the recorded cases, and where there is evidence of abdominal disease with subsequent pneumothorax, the possibility of the production of gas by bacteria is worth bearing in mind. The onset of the condition seems commonly to be gradual, and not abrupt, as is usual in pneumothorax.

May lays much stress on a chemical analysis of the gases. He points out that a cavity may become infected by air-producing bacteria, and yet the pneumothorax be due to communication with the external air. The presence of a gas in the cavity, not found in atmospheric air, may therefore be regarded as a proof of its zymotic character.

In May's case hydrogen was present in sufficient quantity to burn, and this simple test, if constantly present, may serve to replace the more elaborate method of chemical analysis. It may be remarked that the bubbles of gas produced by the bacillus capsulatus aërogenes are also inflammable.

In conclusion, it may be now accepted:—(1) That pneumothorax may in exceptional cases result from gas-producing bacteria, and that the bacillus coli or bacillus capsulatus aërogenes may be the organism concerned. (2) That the presence of hydrogen or other gases not found in the atmosphere is conclusive proof of this condition being induced by gas-producing bacteria (May).

OBSERVATIONS ON ADENOIDS AND ENLARGED TONSILS AND THEIR REMOVAL.*

BY

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Few practitioners have a due conception of the prevalence of enlargements of Waldeyer's lymphatic ring,—the glandular tissues found in the upper pharynx, chiefly in the faucial and pharyngeal tonsils. It is only by reviewing the cases which present themselves in the wards of a children's hospital that a fair idea may be obtained, and I propose here to record the cases which have come before me in my service in the Hospital for Sick Children during the years 1895-99, and to make a few observations upon the diagnosis and treatment.

Total number of cases operated upon, 103; males, 47; females, 56.

Enlargement of faucial tonsils alone, 24; males, 6; females, 18.

Enlargement of the third tonsil alone, 31; males, 17; females, 14.

Enlargement of faucial and pharyngeal tonsils, 48; males, 24; females, 24.

Under 5 years of age, 24 per cent.

Between 5 and 9 years of age, 52 per cent.

Over 9 years of age, 24 per cent.

Number of cases re-examined, 19; percentage of persistence of, or return of, some portion of the growth, 20.

Number of cases operated on previously to entering the hospital, 5.

Number of deaths, 2.

Although the number of cases is in itself large, this only serves to emphasize the fact that the disease, in one or other of its forms, is very prevalent. Few of the patients were brought for treatment because an enlargement of the faucial tonsils had been observed, but rather because some function of the upper respiratory tract was being interfered with in a manner which aroused the parents' fears. Thus a large proportion were referred from the ear department where the patient had sought relief from deafness or otitis media. Perhaps a larger number, still, complained of noisy and distressed breathing, especially during sleep. Again, nasal symptoms, such as refusal of the child to blow its nose, or a constant catarrhal discharge with fissura nasi, or with eczema of the edges of the nostrils, were most prominent. In a large number of cases

* Read before the Canadian Medical Association, Toronto, September 1, 1899.

the chief complaint was that the child had a cold in its head, or rather had a persistently continuous cold in the head.

In the class of patients which attends the public clinic of a hospital it is frequently difficult to get a clear history, for the parents are non-observant or too careless to take notice of symptoms so evident to the trained eye or to the careful mother. To this reason I would attribute the small proportion of cases where heredity could be traced, and also the fact that in but few cases could any evidence be elicited pointing to an attack of one of the eruptive fevers as an exciting cause. In a sufficient number of cases, however, both heredity and an attack of measles or scarlet fever were distinctly enough connected with the onset of the symptoms to show that these causes play an important part in the etiology of these overgrowths.

As would be noticed from the above schedule, 47 per cent. of the cases presented enlargements of both the third and one or both of the faucial tonsils. In about 30 per cent. there were adenoids only, while in less than 24 per cent. the faucial tonsils were alone diseased. In other words, there was disease of the third tonsil present in 70 per cent. of the cases and of the faucial tonsils in 53 per cent.

Since adenoid enlargements are concealed from view, their presence must often escape detection in those cases where they are not accompanied by pharyngeal disease. In the diagnosis of the presence of adenoids I find an inspection of the facial expression most useful. As a rule the nose is flattened and broadened between the eyes. This is the case especially in the younger children, and is the more marked in proportion to the extent to which the mass fills the naso-pharyngeal space. If the nose is well formed and adenoids are present the obstruction is either only partial, or else the enlargement of the gland has occurred subsequently to the proper development of the nose. The interference with the shape of the nasal framework appears to be due to the prevention of natural development rather than to the effect of pressure or stenosis upon an organ already developed. The presence of the open mouth and the constant keeping of the lips ajar, especially when the child is in repose, is also a prominent feature in the facial expression in these cases, and if found in conjunction with the flattened bridge, is almost symptomatic of adenoids. Another point that I have often observed is in connection with the pharyngeal appearance, and it is this, that the palate appears partially paralysed, as if there were pressure upon its upper surface which clogged the muscles in their efforts to raise it, the result being that there is a large gap left between the free edge of the palate and the posterior pharyngeal wall.

It is best to diagnose the presence of adenoids by actual sight, however, and this frequently is difficult. Few children will permit the skilful use

of the rhinoscopic mirror, and it is a waste of time to persist in the attempt if the first trial is a failure. The most satisfactory way to see the adenoids is by the nose. The use of cocaine to dilate the passages and of a circular or oval speculum to dilate the nostril, will permit of an excellent view of the glistening swollen gland through the inferior meatus, and the trained eye may be assisted by the use of a long angular probe by which the position and consistence of the mass may be easily defined. A deflection of the septum or a spur may be in the way, but it is seldom that a good view may not be obtained through at least one nostril. As a rule, indeed, I have observed that in many cases when adenoids were present the nasal chambers were unusually patent so that cocaine was not required.

It is often laid down in text-books that the finger should be introduced into the nasopharynx for the purpose of diagnosing adenoids, but in my opinion there are several serious objections to this procedure. It is a disagreeable and somewhat dangerous performance for the physician, and for the parent it is a most distressing sight to witness the struggles of the child. So far as the patient is concerned, moreover, it destroys the confidence placed in the doctor so that thereafter it becomes impossible for him to obtain the child's consent to even the ordinary methods of examination and treatment. It should be the rule never to hurt the child if it is at all possible, and if the manipulations necessary to examination are made painless and in such a way as to win the child's confidence, much will be gained thereby. This method of examination should never be employed unless and until all others fail, and in my own experience this will be seldom. For the same reason I deprecate the use of the bi-valve speculum for the nose. It has long since been discarded from my ordinary examinations and treatment procedure, as its use is always attended by pain or at least discomfort.

The enlargement of the faucial tonsil is as a rule easily seen, but there are exceptions. The tongue should always be kept within the teeth and depressed in such a way as to prevent gagging, else a false idea of the size of the glands, or, rather, of the relative space they occupy, is apt to be obtained. It often happens, too, that the lower parts of the gland are alone enlarged and can only be brought into view when the tongue is deeply and yet gently depressed. The aim in examination must always be, not to recognise the enlargement simply, but to determine the amount of obstruction to the normal air current and the hindrance afforded by these enlargements in the proper performance of their functions by the parts adjacent.

Treatment.—When the enlargements are reasonably to blame for the symptoms complained of, it is generally a waste of time and a foolish delay to attempt their reduction by astringent sprays or alterative and

tonic constitutional treatment, in fact, by anything short of operative procedure. This is true whether one or all of the glands are swollen. The only exception that may be made is in the case of children closely approaching puberty, the age when nature may be expected to put forth a controlling influence upon the size of the glands. Even here very careful judgment must be exercised, and it is better to operate than to run the risk of ear complications which may permanently disable the patient. For, a comparatively slight enlargement may, by its tendency to promote catarrhal trouble, sow the seeds of chronic ear catarrh and promote early deafness.

In regard to the younger patients, the well-established facts regarding the influence of these enlargements upon the general health of the child, together with the imminent danger presented by large masses of diseased tissues situated directly in the path of the inspired air in its road to the lungs, loading it with impurities rather than cleansing it, offer every reason and justification for the immediate removal of the offending masses.

It may certainly be the case that the enlargements are not excessive, and while they give rise to annoying symptoms, still these are not fraught with immediate peril; but still, is it wise to submit the patient to treatment which promises so little, and which by the time it demands prolongs the danger period for the patient?

Every case requires careful consideration of all its details before operation is advised or postponed. We should not hesitate to remove the offending masses, because we but dimly understand the part they play in the child's development, nor, on the other hand, should we condemn a faucial tonsil to the knife if it but so much as put forth its head beyond the faucial pillars.

When operation is deemed needful, and in every case where adenoids are present, it should certainly be performed under an anæsthetic; and the anæsthesia should be *profound*. Thorough work cannot be done by a hasty scraping of the nasopharynx in a struggling patient, and it is in these cases where no anæsthesia is used that recurrence of the growth is to be expected. Again, it adds unnecessarily to the difficulties of the operation to be compelled to administer more of the anæsthetic after the first incision has been made. The anæsthetic employed in the above cases has been chloroform in most instances, but in a number of the simple cases I have used a combination of nitrous oxide and oxygen gases. It is difficult to complete a thorough operation, unless there be only a single gland enlarged, in the short period of about 45 seconds that the gas allows to the operator, and therefore its range of usefulness is limited.

With regard to the position of the patient, the prone position should

be maintained until the tonsils have been removed ; then the head should be drawn down over the edge of the table, the left forefinger inserted into the nasopharynx and used as a guide to the instrument held in the right hand. This position will lessen the possibility of blood entering the larynx. Of late, a number of cases of severe hæmorrhages following operation have been reported, and as we have no means of knowing when an artery may lie in an unusual situation, this accident is one that is liable to occur to any operator. The percentage of cases of severe bleeding is very low and I have yet to meet with a case that gave me any alarm. The loss of blood at the time of the operation is always very considerable, and this cannot be avoided. I have used solutions of suprarenal capsule extract for the purpose of lessening the hæmorrhage, but have failed to observe any good effects. An iced spray of Dobell's solution for twenty-four hours before and after operation will be useful in keeping down the bleeding.

Two of my operations resulted fatally but in neither instance was death due to the operation. One child was attacked by scarlet fever and the other died from the anæsthetic.

There are difficulties in arriving at a proper estimate of the percentage of recurrences. I have made examinations of some 19 patients from 11 to 4 years after operation, and in less than 20 per cent. was there any trace left of the disease. In none of the cases could there be said to be any re-enlargement of the glands, and I am inclined to believe that the traces which remained were due to an insufficient removal at the time of operation. It is generally more difficult to remove a left tonsil thoroughly than a right, while if the patient take the anæsthetic badly or the hæmorrhage is troublesome, a small portion of the adenoid overgrowth may escape detention. In some cases any remnant will be absorbed in the healing process, but in others there are constitutional conditions present which prevent this absorption process.

Usually, operative procedures are attended by the most wholesome results, and I have yet to see the child when any untoward effect took place.

In this paper I have not attempted to do more than is embraced by the title, and have made no pretense to cover the subject.

AN EXPERIENCE IN FORMALDEHYDE DISINFECTION.*

BY

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On the evening of Tuesday, the 6th June last, the S.S. "Lake Huron" arrived at the Quarantine Station of Grosse Isle, in the River St. Lawrence, below Quebec. She was twenty-five days out from Batoum on the Black Sea, with two thousand three hundred Doukhobor immigrants on board, and a crew of sixty-nine, including the pilot.

Smallpox being found on board, the vessel was ordered into quarantine. Seventeen cases of this disease, eleven of the Doukhobors and six of the crew, were removed to the hospital between the time of the arrival of the vessel and the completion of the landing of the persons and effects she had brought. All the 2,300 passengers were landed by the Friday evening, the 9th. The heavy luggage from the hold was landed on the Saturday and Sunday. The vessel was disinfected on the Monday and Tuesday, the 12th and 13th, and she was offered to her agents for release, with a new crew, on Wednesday, the 14th, at 4 a.m.

The usual methods employed in the Canadian Quarantine Service for the disinfection of vessels are as follows :—

Steam for all hospital cabins and other small apartments where it can be used ; formaldehyde for saloons, staterooms and small apartments where the permanent fittings would be destroyed by steam ; sulphur dioxide gas, under pressure from the blast furnace, for holds and steerages ; and mercuric chloride solution for all free surfaces, alleyways, latrines, bilges, etc.

On this occasion the sulphur dioxide blast appliance of the station was not available. Steam is not suitable for large apartments as the temperature cannot be kept up, and the steam is therefore precipitated as simple hot water. Accordingly, formaldehyde was used for the holds and steerages on this occasion.

The cubic space involved was as follows :—

	Cubic feet.
Main deck, three compartments open longitudinally	34,453
	13,441
	26,977
	74,871
Forehold, three compartments perpendicularly open by hatchways	17,534
	13,461
	18,117
	49,112

* Read before the Canadian Medical Association, Toronto, August 30, 1899.

	Cubic feet.
No. 2 hold, three compartments perpendicularly open by hatchways {	17,680
	15,727
	22,975
	56,382
No. 3. hold, three compartments perpendicularly open by hatchways {	4,657
	4,264
	5,920
	14,841
No. 4 hold, two compartments perpendicularly open by hatchways {	13,446
	19,530
	32,976
After hold, two compartments perpendicularly open by hatchways {	13,734
	13,520
	26,254
Total measurement, 254,436 cubic feet.	

The formaldehyde was liberated from formalin, the forty per cent. aqueous solution of the gas. Twelve ounces of the solution were allowed for each 1,000 cubic feet of space. The time of exposure was eight hours. Two instruments were employed in this part of the work.

Although, as stated, the disinfection of the vessel was completed on the morning of Wednesday, the 14th June, owing to heavy weather it was not until Friday, the 16th, that the new crew could be sent down to receive and take away the vessel. During this interval an "anchor watch" was kept on the vessel's deck, and in her engine room, the officers and crew continuing to live on shore. When the small steamboat bringing the new crew came in sight, the last of the old crew were brought ashore, and the "Lake Huron" was left riding at anchor in the offing without anyone on board. The new crew that then boarded and took her away were from a sister ship, the "Lake Superior," then at Quebec. After taking the "Lake Huron" up to that port they had to leave her within a day or two to rejoin their own vessel. They were at once replaced on the "Lake Huron" by another, a third crew.

Thus two new sets of men boarded, occupied, lived and slept in this vessel within from two to four days following her disinfection, after there had just been removed from her seventeen cases of smallpox, scattered among nearly 2,400 people packed on board, and having occurred both in the steerages and in the fo'castles.

This constituted, of course, a much more severe test of this method of disinfection than the re-embarking of the original crew would have done.

I am happy to be able to state that there has not been reported any subsequent case of the disease in connection with any of these persons, or traceable in any way to this vessel, during the two months and a half that have now elapsed since these events occurred.

I am aware that this disinfectant, formaldehyde, has been employed

for the purification of vessels ; notably some of the United States transports after recent service at Cuba. But I have not seen any instance recorded of its use on so large a scale in the face of actual infection with smallpox. Nor do I know of its results being put to so crucial a test as upon this occasion.

In my opinion the use of sulphur dioxide driven in from the sulphur furnace under the strong pressure of the exhaust fan must remain our chief reliance for large apartments, such as holds and steerages. But this instance of the successful employment of formaldehyde as an alternative is not without its value. I do not forget how careful we have to be not to hastily draw conclusions from any one case or occurrence, still it is only by the noting of single cases that cumulative evidence can be obtained, and I have, therefore, thought this test of formaldehyde disinfection on a somewhat extensive scale to be of sufficient interest for me to bring it before this Association.

A CASE OF DIFFUSE HYPERTROPHY OF THE BREASTS.*

BY

JAMES BELL, M.D.,

Professor of Clinical Surgery, McGill University; Surgeon to the Royal Victoria Hospital, Montreal.

This patient, a healthy, well-developed and well-nourished French-Canadian girl, seventeen years of age, from a country district, was admitted to the Royal Victoria Hospital, on the 3rd of August, 1899, with enormous hypertrophy of both breasts, as shown in the accompanying photographs. She was of a healthy family, with no known pathological heredity. She began to menstruate at the age of fifteen, but that function had always been somewhat irregular both in the duration of the period and the length of the interval, though otherwise normal. Her colour was good, and nothing abnormal was found about any of the organs with the exception of a slight trace of albumin in the urine.

The breasts were very large, painless, and moderately pendulous. On palpation, the sensation communicated to the hand was that of a partially filled sac of fluid containing freely moveable, hard, fleshy masses. Just below the nipple of the left breast, was a patch of ulceration as large as a half-dollar coin, the result of pressure gangrene. Large veins ramified over the surfaces of both breasts.

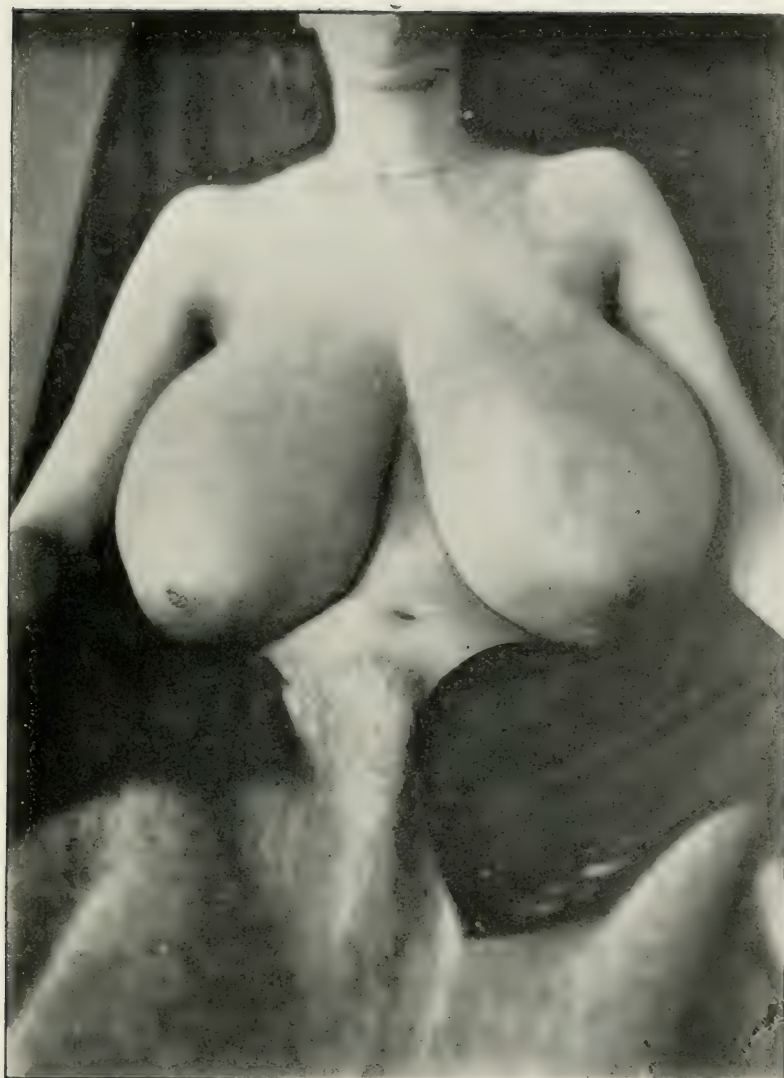
She had first noticed in November, 1898, that the breasts were large, but it was only in March, 1899, that the enlargement became very marked. From that time they had increased in size very rapidly, but without pain. The ulceration had begun two weeks before admission.

The left breast was removed on August 7th, and weighed $6\frac{1}{2}$ pounds. The right was removed on August 26th, and weighed 5 pounds and 13 ounces. The skin over the surface of each breast was greatly thinned and the subcutaneous cellular tissue much condensed, so that it was dissected off with difficulty. The underlying connective tissue was also much condensed. On section, there appeared to be a general hypertrophy of both glandular and fibrous tissues, and all the tissues were very firm. Professor Adami kindly examined sections from the left breast, and the following are extracts from his report :—

“ It is not pure hypertrophy of the gland tissue, though that must be present, but is essentially, I take it, an orderly hyperplasia of the fibrous tissue,—granuloma of the same. The abundant connective tissue between the alveoli is too perfectly formed to allow the condition to be spoken of

* Read by title at the Meeting of the Canadian Medical Association, Toronto September 1st, 1899.





as fibromatous. If I may use the term, there is here a 'cheloid' overgrowth of the connective tissue."

This condition, though somewhat rare, is well known, and is described in most surgical works and monographs upon the diseases of the female breast. I quote the following sentence from Dennis (*System of Surgery*, Vol. IV., page 895) :—"The disease has been known according to Selbet since the time of Galen, and has been described by Velpeau, Billroth, and others." It generally occurs in young girls, and is symmetrical, and though no definite cause can be assigned for it, it is thought to be in some way associated with the function of the genital organs, and is therefore often attributed to masturbation, etc. As for treatment, nothing can be done to arrest the hypertrophy once it has begun and removal of the breasts soon becomes necessary on account of their great size.

A CASE OF SUBCUTANEOUS EMPHYSEMA.*

BY

FREDERICK FENTON, M.D., of Toronto.

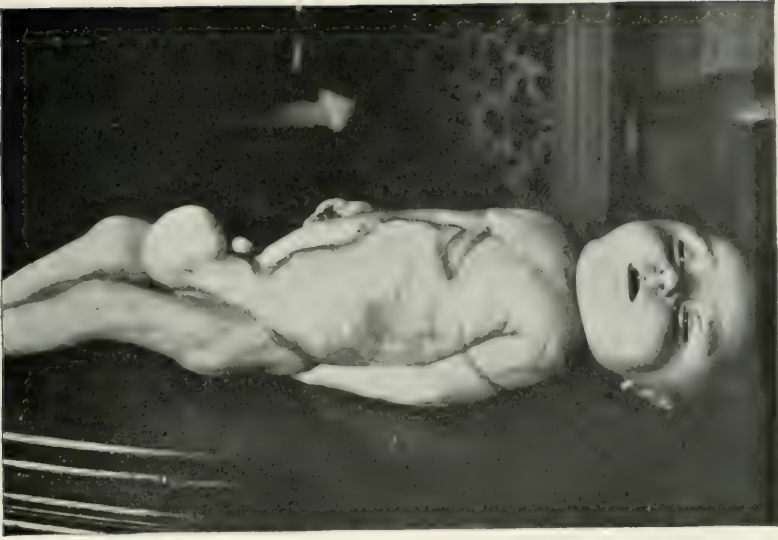
The notes I wish to present are those of a case of subcutaneous emphysema occurring in an infant, the subject of tuberculosis.

The child was six and a half months old and was described as having been well until it was five months old, except for an attack of bronchitis at about the middle of its third month. No loss of weight was noticed until the fifth month, during which it had what was diagnosed bronchitis.

On December 23rd last, five days before death, the baby was very restless but had no unusual amount of coughing ; in fact, the cough had never been a marked feature of the disease at any time. The same evening the mother noticed a puffy swelling just above the sternum to the left of the middle line, which extended towards the left side of the neck. The swelling advanced more or less rapidly until, when I saw the child on the 25th, it had involved the greater part of the neck, chest, and shoulders. From this until the time of death its progress was continuous, passing upwards over the head and downwards over the chest and abdomen. It was limited in the neck, behind, by the anterior border of the trapezius muscle and above, by the attachment of the cervical fascia to the inferior maxilla. Over the parotid gland it continued upwards, spreading forwards over the cheeks, which became very hard and prominent, and passing over the head so as to bulge out the vertex. This is well shown in photograph No. 2. Passing down the chest wall in front, it became limited at the lower border of the pectorales majores except over the outer half of the left, where it escaped and continued its onward march to the abdominal wall. Here it passed forwards as far as the linea semilunaris on the left side, backwards to the spine, downwards to the crest of the ilium and Poupart's ligament. Over the inner half of the ligament it escaped, gaining access to the scrotal tissue, which it distended greatly. The gas also spread down the arms about half way to the elbows.

In the photographs, which were taken about six hours after death, the limits of the emphysema are roughly outlined with ink. In photograph No. 2, tapes were tied about the body and show the amount of swelling present. By comparing the two sides of the abdominal wall a very fair idea is obtained of the extent of the change.

* Read before the Canadian Medical Association, Toronto, August 31, 1899.



No. 1.



No. 2.—Swelling on top of head well shown, also in upper part of arms and shoulders. By comparing right and left sides of abdomen the depth to which cord sinks indicates the extent of emphysema.

A post-mortem examination made about six hours after death revealed the following condition:—

The body was not greatly emaciated. Rigor mortis was slight. The emphysema was as stated above, except for some slight decrease in its volume. The subcutaneous tissues were dry and bloodless. There was a pneumothorax on the left side, the lung being partially collapsed and at the back part of the cavity. There was no fluid or adhesions. The bronchial lymph nodes were enlarged.

The left lung showed many emphysematous blebs of varying size, and, on section, large numbers of yellow tubercles. The point of entrance of air to the pleural sac was not found.

The liver was large and showed marked fatty change, the spleen large and had a number of greyish tubercles scattered over its surface. No gross lesions were found in the other organs. The brain and cord were not examined. There was no gas formation in any of the internal organs except as stated.

The emphysematous blebs could be traced to the root of the lung and from thence upwards along the trachea into the neck. In the right thorax there were pleural adhesions everywhere. They were especially dense over the upper and middle lobes, where they required section in order to free the lung. The greater part of the upper and middle lobes, corresponding to the greatly thickened pleura, presented a large sacculated cavity containing pus and disintegrated lung tissue. The balance of the lung was literally stuffed with yellow tubercles, being in a condition of tuberculous pneumonia.

Microscopical examination of the tissues demonstrated tubercle bacilli in the contents of the cavity in the right, and throughout the tissue of both lungs, in great numbers, and a few in the liver and spleen. None were found in the kidneys. In the spleen and liver they were confined to the giant cells, but in the lungs were found throughout the tissue and in the vesicles apart from giant cells.

Since the death of the child, enquiries have elicited the fact that the father, a man of about 50, has suffered from a winter cough for years. He is emaciated and has a very husky voice, and examination of his sputum revealed the presence of tubercle bacilli. His may, of course, be a case of chronic bronchitis with a tuberculous infection engrafted upon it, but as he was then in his usual state of health, or rather, I should say, ill-health, I believe that his tubercular disease has been the cause and not the effect of the child's illness. No direct evidence of tuberculosis was obtainable in the mother, but she is poorly nourished and looks a fit subject for the disease.

This is but an instance that illustrates the necessity of employing the more exact methods in the routine examination of lung cases. The

production of emphysema in such cases is usually ascribed to prolonged and violent coughing, which, as I have said, was never a feature of this case and can have had but little to do with the emphysematous condition. The large area of the right lung involved by the primary disease had doubtless given rise to a compensatory vesicular emphysema of the left and of the balance of the right lung. Add to this the complete involvement of the right lung with the consequent abolition of its functions by the acute secondary infection with its accompanying pneumonic process, and a similar though less extensive involvement of the left lung, and there is, I believe, the combination which has produced extreme dilatation of the remaining vesicles of the left lung, one of which, either spontaneously or from increased pressure in the respiratory tract due possibly to cough however slight, has given way and led to the results described.

The point as to the presence of the gas bacillus was, I regret to say, not determined. The clinical history of the case, the distribution of the emphysema, the absence of gas from the substance of the internal organs, the long duration of the condition before death, and the slight decrease post-mortem, may be taken as proof, if not of the absence of that bacillus, at least that the condition was not due to its presence, and that therefore, pathogenically, it was absent.

The question of ante-natal infection arises. The extensive distribution in the lung, the primary focus, in so young a child points very strongly to such an origin, but as there could be no means of determining such in this case I will not enter into that aspect of it. The presence of tubercle bacilli in the father's sputum taken in conjunction with the miserable sanitary arrangements of the house, is quite ample to account for the child's infection, but it is hard to imagine such extensive destruction of lung tissue by the primary tubercular process which, if we exclude ante-natal infection, could not have existed for more than six months.

RECURRENT PARALYSIS OF THE OCULO-MOTOR NERVE.*

BY

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Ophthalmologist to the Montreal Maternity.

The comparative rarity of recurrent third nerve paralysis induces me to report the following typical case, although it lacks the final demonstration of the pathological lesion. Until ten years ago but very few cases had been described and even yet from all sources I can collect only about thirty cases, of which but four were examined post mortem.

The characteristic symptoms of the disease are the sudden onset of unilateral frontal headaches, which may last from days to weeks, and are associated with vomiting, malaise, and sometimes fever. Simultaneously with or shortly after this, paralysis of the third nerve on the same side appears. This paralysis may be complete or partial, and lasts for a varying time after all the other symptoms have disappeared. There is sometimes paræsthesia in the area of the superior branches of the fifth nerve on the affected side, and the fields of vision show a varying contraction. These paralytic symptoms may entirely disappear to suddenly recur with the same severe headache, etc., at a period varying from weeks to months, or even years. In other cases the disease takes on an exacerbating form, there being but incomplete recovery from the paralysis during the intervals between the attacks. In this latter form the tendency is for the disease to become gradually worse until finally complete permanent oculo-motor paralysis develops. The former type is known as the periodic, there being complete absence of any paralysis during the interval, but the recorded cases of this type are very few, and it would seem that they almost invariably take on the exacerbating characteristic. The disease generally begins in very early life, even in infancy. At the onset, the patient may only complain of severe bilious or migraine-like headaches, and years may elapse before the paralytic symptoms appear.

As to the pathological conditions, it is held by many that the simple periodic type is not associated with any marked organic lesion, in fact, that it is a functional nerve explosion dependant on some variety of auto-intoxication. Priestly Smith considers it due to the accumulation of uric acid, and mentions a recovery due to treatment on these principles. Other authorities claim errors of refraction, worms, and nasal stenosis, as main causes, and quote recoveries resulting from treatment

* Read by title before the Canadian Medical Association, Toronto, August 30, 1899.

directed against these causes ; but the possibility of very long intervals between the attacks leads one to accept such statements with caution. On the other hand, the true exacerbating type is held to be invariably due to some organic lesion.

Wadsworth, of Boston, reports a case associated with chronic suppuration of the middle ear on the same side, in which an onset of the eye symptoms occurred with diminution of the aural discharge, and a disappearance of them with an increase of the discharge. Wadsworth considered a basal meningitis as the cause in his case.

The autopsies so far have been four in number, and in all of these there was marked disease of the nerve trunk. The following are the reports :—

- (1) Plastic exudation around the nerve trunk.
- (2) Gray granulations containing tubercle bacilli in the nerve trunk.
- (3) Fibrochondroma of the nerve.
- (4) Small fibroma of the dura mater involving completely the nerve ; the nerve fibres were degenerated but the nucleus was intact.

The case which came under my notice is as follows :—

Nellie R., aged 14, was first seen by me on May 12th of this year. The child complained of seeing double and of drooping of her left eyelid, which had persisted for the past two or three days. Four days ago she had what she called a severe bilious headache, limited to the left side of her forehead, and which lasted for three days. This was accompanied by vomiting, and on the second morning after the onset she saw double and could not raise her left upper eyelid. She had a similar attack three months ago in the same eye, the symptoms disappearing in the course of a week, and again previous to this, two years ago, after an attack of diphtheria, there was drooping of the left upper eyelid and double vision. There is a history of frequent sick headaches since early childhood occurring nearly every month, but the double vision has only been noticed during the past two years. She has had frequent attacks of sick headache and vomiting for two years, all of which have been accompanied by double vision, but without ptosis except on the three occasions mentioned. The patient tells me that near vision with the left eye has been defective for years, almost as far back as she can remember. The child is well nourished and of the fair type, rather undeveloped for her years. Mentally, she is bright and intelligent. There is no history of any serious illness. Her mother has been in an asylum four or five years, but there is no other family history of any importance, and there seems to be no family tendency to tuberculous infection. The girl has not yet reached puberty. Her condition on May 12th was as follows :—

Paralysis of the left third nerve in all its branches, excepting that to

the sphincter pupillæ, for although widely dilated, the pupil reacted sluggishly to light and on convergence, but the accommodation was absolutely paralyzed. The eye-ball was divergent in position. There was no paræsthesia in the area of the fifth nerve. Vision, right eye, $\frac{5}{15}$; pupil active and accommodation good; a low degree of hypermetropia. Vision, left eye, $\frac{5}{10}$; pupils sluggish, widely dilated, accommodation nil. With a spherical plus 5D she can read J.I. at eight inches. The light minimum as tested by Wallace's photometer is 4°. The fundi are normal. The field of vision shows a general peripheric contraction of 10 to 15 degrees when using a test object 5mm. square.

The knee reflexes, etc., are normal, as are the general body functions.

On June 21st, only a slight paresis of the left internal rectus remained. The ptosis had disappeared; there was no divergence of the eye-ball; the pupil still reacted sluggishly to light, and the accommodation was still absent.

On July 12th, only the pupillary and accommodative phenomena persisted; the light perception was increased to 5°. On August 21st, I found that since last seen she had had a slight attack of headache, etc., with double vision, but no ptosis; the symptoms disappeared in a few days, but the accommodative and pupillary symptoms remained unchanged.

My patient forms a typical example of this rather rare malady. There was marked hereditary tendency to nervous instability on the maternal side. The attack of diphtheria would seem to have been the more immediate exciter of the oculo-motor paralysis, but we have the history of years of indistinct vision for near objects pointing to the early existence of cycloplegia. As to the pathological lesion one is in the dark, but, judging from the experience of others and the marked exacerbating type of the disease, there can be no doubt as to a marked organic lesion being present, most likely in the nerve trunk. It seems curious that such a vast majority of the cases of recurring paralysis of the ocular muscles should belong to the oculo-motor group, the sixth and fourth nerves supplying but very few cases. As Gowers pointed out, the sixth nerve, on account of its long course round the pons, is exposed more than the other basal nerves to the effects of any pressure, and its paralysis is a most common distant symptom of intracranial trouble. Yet in these recurrent types of paralysis it almost invariably escapes.

A CASE OF PENETRATING GUNSHOT WOUND OF THE ABDOMEN WITH LESIONS OF INTESTINES SUCCESSFULLY TREATED BY IMMEDIATE OPERATION.*

BY

NORMAN E. MCKAY, M.D., of Halifax.

Perforated gun shot wounds of the abdominal wall with intestinal lesions are of interest because of their high mortality.

Paul Ziegler, writing on the treatment of these wounds, says that in the University of Munich they have treated seven gunshot wounds by immediate laparotomy with a mortality of 58 per cent. He advises immediate operation as the best and wisest course to pursue, as it is impossible to tell from the symptoms, in the majority of cases, whether or not perforation has taken place.

I do not know of any case of penetrating gunshot wound of the abdomen with perforation of the intestines treated by immediate operation having been reported in Canada.

The following case I had in my practice last year :—

R.H., aged 34, teamster, married, was admitted to the Victoria General Hospital on the night of August 8th, 1898, with a bullet wound of the abdomen and also one of the left side of the chest immediately below the axilla. The latter wound was not much more than skin deep. When the man was brought into the hospital, he was in a semi-stupid condition from liquor and morphine that had been injected to relieve pain, so that it was difficult to get from him any reliable data regarding the shooting accident.

He had been a hard drinker all his life time, and was drinking heavily during the five weeks immediately preceding the accident. The evening of the shooting, he and a chum forced an entrance into a small beer shop by the road-side, four miles out of the city. The patient is a very muscular and powerful man. When he entered the house he was met by the proprietor with a loaded revolver, who fired at him, the bullet entering the left side of the chest a little below the axilla. This staggered him somewhat, but he soon recovered himself and rushed at his assailant, who again fired at him. This shot took effect. The bullet entered the abdomen about three inches to the right of the umbilicus and on a level with it. The man fired at him the third time, but missed. The patient fell on the floor unconscious, in which condition he remained for some time, but he had recovered by the time the doctor arrived with

* Read by title at the Annual Meeting of the Canadian Medical Association, Toronto, August 31st, 1899.

the ambulance. He was suffering great pain, so much so that the doctor who saw him first had to give him $\frac{1}{4}$ gr. morphine hypodermically. The shooting took place about eleven in the evening, and he got to the hospital at 12.30, just an hour and a half after the accident. After some little time I managed to get out of him that his assailant was standing at a distance of about three feet right in front of him when the second shot was fired. Judging, therefore, from the relative position of the two and the distance they were apart when the shot was fired, I was satisfied that the bullet had perforated the intestines. Very little hemorrhage went on internally, for the man had no appearance of shock when I first saw him or subsequently. The pistol used was a 32 calibre one.

Prognosis was of course unfavourable. I decided to operate at once, or not at all. I explained to the man as best I could to a person in his condition the serious nature of the accident, and strongly impressed upon him that the only thing to be done to save his life was an immediate operation, to which he consented.

The patient was prepared at once for operation in the usual way. (Parts washed and scrubbed well with soap and water, then with ether, and, lastly, with bichloride, 1 in 500). Ether was the anæsthetic used. The abdominal cavity was opened by a vertical incision about five inches long, three-quarters of an inch to the inside of the bullet wound, so that the middle of the incision was opposite the wound. Upon opening the peritoneum, I came right down on the upper part of the ascending colon which was distended with gas. It looked all right. There was no blood in the peritoneal cavity, neither was there any evidence of extravasated fæces.

I now probed the wound in the abdominal wall to determine, if possible, the course the bullet took after it had entered the peritoneal cavity, and as far as I could make out it was antero-posteriorly. There was no wound of exit. I then searched for intestinal perforation, and found a wound in the colon near the hepatic flexure. I detected the perforation by the noise of gas escaping through it when I pressed the wall of the colon together, and in like manner the other three wounds were located. There were two wounds in the colon, one of inlet and one of exit, and two wounds in a loop of the intestines which happened to be lodged behind the colon in the line of the bullet's course. The wounds were small and difficult to locate; there was no loss of substance; the intestinal walls were simply lacerated. The operation was performed at night with artificial light. The distended state of the intestines with gas was very favourable for locating the wounds, which I closed with a Lembert suture.

On satisfying myself that there was no other wound of the intestines, I lifted the wounded portion of the bowel from the abdominal cavity

and douched them thoroughly with bi-chloride lotion, 1 in 8000, and then returned them and flushed the peritoneal cavity with normal saline solution, and after drying the parts thoroughly, the abdominal wound was closed with three rows of sutures, the peritoneum with continuous cat-gut, the muscles with interrupted sutures of cat-gut, and the integument with interrupted sutures of silkworm gut. A glass drainage tube was inserted in the wound for twenty-four hours.

He stood the operation well. For the first twelve hours after the operation the patient vomited considerably, but he complained of very little pain. His stomach kept irritable for three or four days, and for the first six days his temperature ranged between 99° F. in the morning and 101.8° F. in the evening. The next four days, however, his temperature and pulse were normal, and he felt well. All this time he was fed with liquid diet and his bowels were quite regular.

About the 19th of August, the tenth day after the operation, he complained of deep-seated pain in the region of the wound, and his temperature ran up to 101° F., and on the 21st, at 9.45 p.m., it was 102° and the pulse 88. The pain was much worse now, and it extended down the front of the right thigh to the knee in the course of the anterior crural nerve. It was so intense that he was unable to straighten his limb. He had no chill at any time during the progress of the case. From now till the 1st of September his temperature ranged from 100° to 103°, and his general condition continued much the same. It was quite plain now that the bullet was lodged in the vicinity of the roots of the anterior crural nerve. Two or three unsuccessful attempts were made to locate it with the X-rays. After he took the change for the worse his side was bathed with boracic lotion as hot as he could bear it, three times a day, and large gauze pads soaked in the hot lotion were kept continually on his side. About the 1st of September he began to improve, and continued improving steadily till he completely recovered. He was discharged well on the 24th of September. He has been attending to his usual work ever since, and has not been ill a day.

Case Reports.

A CASE OF MORPHINISM ASSOCIATED WITH THEFT.*

BY

GEO. VILLENEUVE, M.D.,

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I have the honour to bring before this Society a few remarks in connection with the case of A. B., said to be addicted to the excessive use of morphine, who was brought before the courts accused of theft and whose case I examined a short time ago. The examination into the mental state of A. B. was ordered at the request of persons who know him and who represented to the court that A. B. was addicted to the abuse of morphine. On this ground they alleged that he was irresponsible, or at least only partly responsible.

I should also add that A. B. had a bad reputation before the courts and in police circles. I was also informed that he had already been implicated in a very crooked affair of attempted swindling. They also told me that he did not lead a very laborious life, that his means of living were not very evident, etc., etc. On the whole, they seemed to consider him, and apparently not without reason, as a common criminal. However, before this last affair, the only one that caused his arrest, they had never had any doubts as to the sanity or responsibility of the accused. The court was also very sceptical with regard to the allegation of his friends.

I was, myself, very much astonished, for, while I had known A. B. for several years, had often had him under my notice, and had met him several times and even had long conversations with him, I had never noticed anything abnormal about him, not even anything particular in his speech or his manner of conducting himself, that would give me reason to hold any doubts regarding the integrity of his mental faculties.

A. B. was accused of having stolen some articles of merchandise from a storekeeper, and previous to his arrest had visited this store several times and under various pretexts. As each of his visits coincided with the disappearance of some object he was strongly suspected, and special care was taken to watch him. His arrest took place in the store, on being detected in the act of hiding under his overcoat an article he had just stolen.

There was no doubt about the criminal fact, the Court was convinced

* Read before the Medico-Psychological Society of Quebec, June 22nd, 1899.

of it ; all that now remained was to enlighten them, on the responsibility of the prisoner. In this case it was sought to attribute the theft to the influence of morphine and it is for this reason that I think it will be interesting to recount the circumstances.

The ordinary psychoses, that is to say, the true perversions of the intelligence which constitute folly do not give occasion for much discussion. They exist or they do not exist. Let the malady be acute or chronic, let it show itself by paroxysms or let it be permanent, it manifests itself by particular symptoms and proves itself through them, and entails irresponsibility. It is different, however, with intoxications when the intellectual troubles are dependent on the action of the toxic agent and do not necessarily appear during the intermittency of the fits, being separated by complete lucid intervals ; when, in short, they are dependent upon the action of, or (rarely) upon the privation from, the agent. In all such cases responsibility is not immediate, and, if I may so say, personal, but depends upon what may be regarded as outside the individual—on some prejudicial agent. So that in the present case we should not only ask, was the accused insane, but had his mental faculties undergone a complete obscuration at the time of the action owing to the use of morphine ; and, if his actions were due to morphine, was he, or was he not, able to resist placing himself under the influence of the drug ? Did he contract the morphine habit by being driven to it through special predisposition, or from an irresistible impulse, or, again, from being drawn into it in some way ? Was he in possession of his free will when he gave way to his *penchant* ? Very often, when the “expert” is called, the troubles have completely disappeared or diminished in a large measure. The expert who is not then a witness, has only to rely on doubtful testimony, and his retrospective inquiry has not the certainty that a direct examination would have given. Taking into account all these difficulties the following contains in substance the report I made to the Court :—

With A. B. the abuse of morphine dates back some years, but it is not habitual. He had twice already given away to it and both times had been under the doctor's care and by his treatment cured of it. He then showed symptoms of grave morphinism, complicated probably by the use of cocaine, delusions, hallucinations and even a tendency to prostration, so much so, that a priest even was called to his bedside. The actual attack goes back several months and began by the medical use of morphine during the course of a surgical treatment, but it was not slow to degenerate into an abuse and was prolonged far beyond his recovery from the surgical operation. The two former attacks began in almost the same circumstances.

This attack, according to the testimony of A. B., did not appear to be as severe as the others, as lately the accused had taken six grains a day, divided into two doses. He had, during the course of this last attack but anterior to his crime, taken stronger doses, and had felt symptoms of intoxication, inebriety, disagreeable hallucinations, etc.

From the moment of his arrest A. B. had been deprived of morphine, and when I examined him he showed unmistakable signs of the sudden suppression and forced abstinence from the drug. He was depressed, weak, emotional and experienced a feeling of disquiet and uneasiness, with a sensation of emptiness in his head, of cramps and pains in his legs and arms. He also suffered from excessive diarrhoea, profuse sweats and insomnia. Besides these signs he showed no trouble that could properly be called mental, or that would indicate in him the existence of any form whatsoever of mental alienation; and it did not appear from the examination to which I submitted him nor from his history, that he ever showed such signs at any period in his life.

A. B. is not then actually insane and everything tends to show that he never was insane. It remains, then, to judge of what action the morphine may have exerted on his intelligence and responsibility in a general manner, but especially at the time he committed the theft.

The following,—taken from an author who has made a special study of the subject—is the generally accepted opinion on the morphine habit.

The person addicted to morphine rapidly reaches a point where he commits indelicate actions without comprehending the importance of what he does. There certainly exists in him, either at an advanced period of the habit or at the time he is forcibly deprived of it, a real diminution of free will. The will, paralyzed, ceases to revolt against certain vicious and criminal tendencies. From the point of view of the legal responsibility of such an individual, it is necessary to know pertinently if the accused had abstained or not from his stimulant at the time of his crime, and the stage of his habit. In the case of prolonged morphine intoxication, when the body is saturated with morphine to such an extent as to change the cerebral functional system, when it is shown to have caused an intellectual weakness and a diminution of the moral sense, the lessening of responsibility should be admitted as an almost certain rule. When the crime is the act of a morphine user forced thereto by the deprivation of the drug, we should consider it as a pathological impulse and attribute it wholly to irresponsibility. In a state of delirium tremens from the morphine, the patient should be considered a genuine lunatic.

It is easy from these points to judge of the responsibility of A. B. It cannot be contested that the habit of morphine has permanently

affected the intelligence of A. B.; his conversation is connected and rational, the details he gave me as to his manner of living are precise, and he appeared to me to be as intelligent as the majority of people of his class, education and profession. A. B. is sufficiently intelligent to understand in a general way the moral value of his acts, and to know the penal responsibility for them; and outside the facts directly due to the influence of morphine, he never showed any intellectual trouble. A. B. is, then, not a lunatic. It only remains, then, to form a just appreciation of the effect of morphine in regard to the offence he committed.

At the time of the criminal offence A. B. was in his usual condition and not excited, while nothing strange in his manner of eating, in his carriage, or in his language, was noticeable. He was not at the time in a state of delirium tremens. Moreover, according to his own statement, he had not had any attacks for some time before his arrest. Nor does it appear that he was unconscious, for A. B. is accused of having stolen certain articles of merchandise from a storekeeper while in his shop, and ocular witnesses testify to the truth of the fact. A. B. gives the same version of all the incidents preceding, accompanying and following his arrest and immediately after the crime, but with this difference, that he denies his guilt. He states that the objects they thought they saw falling from under his overcoat when they forced him to open it, really fell from the sample table. There is here a discrepancy that might call in doubt the veracity of the parties, but not the consciousness of the prisoner. In reality, he told all the circumstances connected with the affair, but he perverted them in his endeavour to establish his innocence. Consciousness is the faculty that enables man to take cognizance of a fact at the moment it takes place. Memory is the faculty of recalling a fact and referring it to the time at which it took place. But memory can be used only in so far as it had knowledge. The prisoner remembers, then he had knowledge; we can affirm that A. B. was not unconscious at the time of the incriminating offence.

The incriminating offence was not, moreover, the act of a morphine user urged thereto by want. He had taken his daily dose of morphine, he was in a state of satisfaction from indulgence in the drug. He had in his pocket a certain sum of money, he could not then have had the dread of being immediately deprived of morphine; moreover, he was near the end of his attack, the craving was less acute, since he had himself considerably diminished the dose he took at first.

A. B. does not appear to have given way to an irresistible *penchant* in giving himself up to the use of morphine, inasmuch as the attack

began with taking the morphine in the course of surgical treatment. The morphine did not act in an abnormal manner, since the toxic phenomena only appeared after he had taken strong doses and after prolonged use. Taking into account, then, the mental state of the prisoner from the special point of view of having indulged in morphine, it would be impossible for me on this head to come to the conclusion that he was absolutely irresponsible. The friends of the prisoner made him out to be a degenerate, but they brought forward no testimony to prove the fact. It is easy to say that degenerates fall into all manner of excesses and that they are very numerous among the victims of the various intoxicants.

It seems to me that the following conclusions are easily deduced from the report I have just given :—

- (1) There is no proof that the prisoner has become addicted to the use of morphine.
- (2) It is not proven that he was insane at the time of the incriminating offence or at any other time.
- (3) It is not proven that he was intoxicated by morphine to such a degree that he lost all knowledge of his acts.
- (4) The act he committed does not show the signs of a pathological act.

Kraft-Ebbing in his treatise on psychiatry says :—"That the person "given to morphine is a man without force of character, without "energy, of weak will power, a man to whom *in statu criminali* we must "always give the benefit of extenuating circumstances." This is an opinion the honorable judge might make use of in sentencing the prisoner, keeping in view the judicial information which he had of his antecedents.

It is certain that the use of morphine more often debases the moral tone of the individual than it effects his intelligence.

In concluding I stated to the honorable judge that he had actually before him a sick man, and that it was the duty of the doctor to implore for him all possible indulgence.

In consequence of this report the Court gave the prisoner the benefit of attenuating circumstances and imposed on him only a light sentence.

RETROSPECT OF CURRENT LITERATURE.

Medicine.

UNDER THE CHARGE OF JAMES STEWART.

Enteric Fever.

W. C. BOSANQUET, M.D. "Notes on Two Hundred and Fifteen Cases of Enteric Fever."—*British Medical Journal*, July 8, 1899.

Statistics on typhoid fever are always of interest, and a report by Dr. Bosanquet on 215 cases of enteric fever treated in the Charing Cross Hospital between the years 1890 to 1898 affords many points of detail gathered from the series. We notice but a few of them.

In no instance could it be established that a previous attack had occurred. About 70 per cent. of the cases were in the last four months of the year. Looseness of the bowels was the rule. In about one-sixth of the cases constipation was present. Abdominal pain, in uncomplicated cases, was present in 15 patients. The spleen was palpable in but 42 instances. Hæmorrhagic cases numbered 21, only 6 of which ended fatally. Not unfrequently, traces of albumin were found in the urine, while 20 patients showed large amounts of albumin denoting actual kidney disease.

Pneumonia was present in about 17 cases, while well-marked pleurisy was found in but one instance. Interesting among the nervous system manifestations of the disease were increased knee jerks and ankle clonus in protracted cases, a case of paralysis of the left foot, a case of loss of knee jerk and pain in the legs; "striæ atrophicæ" developed in another case, not of this series, however.

The temperature in 96 patients rose to 104 ° F., 27 of whom had a temperature of 105 ° F. The pulse rarely rose to 120. Hæmoptysis was present in 7 patients and 4 vomited blood. Sixty-eight per cent. of the cases showed the typical typhoid rash. Eight per cent. presented irregular rashes. They were morbilliform, scarlatiniform, bullous, and petechial. Relapse or recrudescence occurred in 59 cases. In one case there were four relapses. Of the 59 patients who suffered relapses, only

four died. The longest duration of fever—92 days—was noticed in the case of the child who suffered four relapses. Fatal cases numbered 40, or 18.5 per cent. Post-mortem records of 35 cases showed 40 per cent. due to intestinal perforation. Hæmorrhage of the bowel was the cause of death in but one case, pneumonia in 8 cases, pericarditis in one and neuritis in one. Peritonitis without perforation, thrombosis of the pulmonary artery, and embolism of an iliac artery, each caused one death. The remaining deaths were due to cardiac failure. The ambulatory cases, of which there were six, were all fatal. Cyanosis and active delirium were signs of grave import.

The treatment in these cases was expectant, consisting in liquid diet, absolute rest and attention to symptoms. The routine medicine given was dilute hydrochloric acid, syrup of orange and water. Excessive fever was treated by tepid, cold, or iced sponging. Quinine was occasionally used. Turpentine as an antiseptic was most frequently relied upon.

Guaiacol in Phthisis.

A. F. SHOYER. "The Application of Guaiacol in Phthisis."—*The Scottish Medical and Surgical Journal*, September, 1899.

Before analyzing the results of his treatment according to this method, Dr. Shoyer gives in brief summary the review of literature on this subject. He says : (1) that a great number of investigators have used the method ; (2) that the drug is probably absorbed by the skin ; (3) that the antipyretic effect is undoubted ; (4) that there are certain undesirable results, viz., profuse sweats, exhaustion, and danger of collapse ; (5) that the temperature tends subsequently to rise to a higher level in many cases.

The mode of application of the drug is simple. It may be painted on the surface or put on with wool beneath a watch-glass or other impervious material. At first this investigator used six minims of the drug three times daily, increasing up to as many as thirty minims per day. Twenty-five cases were under treatment, and the following is a brief analysis of them :—

Ten were improved, twelve were unaffected, while three were adversely affected. Of those improved, five were febrile, three were subfebrile. Of those indifferent to the treatment, four were febrile and had secondary infection, and four were indefinite. The three cases which did not tolerate the treatment were febrile and subjects of secondary infection.

The writer goes on to show that the best cases are those with febrile temperature free from secondary infection. The subfebrile cases do fairly well. The majority of those improved and discharged from the hospital subsequently returned in a worse condition than before.

Red-Marrow in Anæmia.

J. S. FOWLER, M.D. "An Experimental Investigation on the action of Red-Marrow on the Blood in Anæmia."—*Scottish Medical and Surgical Journal*, September, 1899.

Dr. Fowler, working in the laboratory of the Royal College of Physicians, Edinburgh, experimented on rabbits with a view of determining the value of the red-marrow method in the treatment of anæmia. The summary of his results is briefly as follow :—

(1) Subcutaneous injections of red bone marrow have no action on the red corpuscles or hæmoglobin of healthy animals.

(2) When the red corpuscles and hæmoglobin fall below their normal limits, injections of marrow produce a decided rise in both, but this rise, while well marked and sudden, is of short duration.

(3) Along with the increase of the red corpuscles there is no corresponding improvement in the form of the cells.

(4) The active principle is present in an aqueous but not in an alcoholic extract of marrow. It is not precipitated by boiling, and does not contain iron, and may possibly be a deutero-protose.

"Koplik's Sign" from an Historical Point of View.

SIEGFRIED WEISS. "The correct historical place for the so-called Koplik's early symptom of measles."—*Wiener Klinische Wochenschrift*, No. 25, 1899.

Since 1898 many references have been made to "Koplik's Sign" in the diagnosis of measles, and those who have followed the journals know the character of the eruption which Koplik described. Observing Koplik's description in the *Medical Record*, Dr. Weiss was surprised that so striking a sign could remain so long unobserved. During a search through the literature he discovered in Nothnagel's *Special Pathology and Therapy*, edition 1896, a description of the enanthem and exanthem peculiar to measles, by a Danish physician, Dr. N. Flindt. This writer made his observations as early as 1880, and in so far as a comparison of his description in the German text with that of Koplik in the English text can be made, one must conclude that the enanthem of measles—Koplik's early sign—has been described many years ago. Flindt states that such an eruption may be seen on the palpebral conjunctival membrane as well.

W. F. Hamilton.

Gynaecology.

UNDER THE CHARGE OF WILLIAM GARDNER.

Uterine Cancer.

LANDAU, DR. THEDOR., Berlin. "On the Surgical Treatment of Uterine Cancer and its Recurrences."—*British Medical Journal*, May 27, 1899.

As in mammary cancer, where the surgeon first removed merely the gland or the affected portion while now he removes all tissues having any relation to it, so now the gynæcologist removes for uterine cancer not merely the uterus but often the broad ligaments as well. Carcinoma uteri is essentially a local disease, and patients are nearly always carried off by extension of the disease to neighbouring organs instead of by the affection of distant parts, as in malignant disease of other organs. This is readily demonstrated in the post-mortem theatre where metastases are seldom seen unless the cancer has been present for a very long time. Again, cancer of the uterus is far more likely to recur in the scar after removal than in distant regions, and finally, when the entire broad ligaments are removed with the uterus the results far surpass those attained by simple removal of the uterus itself. Thus "it follows generally that uterine cancer is adapted especially for surgical treatment."

Experience has proven the value of entire extirpation of the internal genitals *per vaginam* by means of clamps. These are preferred to ligatures because of their crushing and necrotising effects and also because they can be applied effectually in regions where ligatures would slip.

"When the carcinoma has spread to the parametria and the uterus is not greatly enlarged in size, vaginal total extirpation is technically possible, and therefore indicated. Only when the enlargement of the uterus caused by the cancer itself or by complication with myoma is so great that not even with the aid of vagino-perineal incisions can the parts be brought out *in toto* through the vagina, is ventral hysterectomy superior to the vaginal method."

Of 123 cases operated upon, 8 died from the operation; 48 of these patients underwent the operation more than five years ago, and of these, 27 per cent. have remained well. Landau systematically removes recurrences, reporting a very successful case.

Fibroid in a Uterus Unicornis.

DORAN, ALBAN, F.R.C.S. "Removal of a Fibroid from a Uterus Unicornis in a Parous Subject."—*British Medical Journal*, June 10, 1899.

The patient was 38 years of age, and had a painful pelvic tumour.

During eight years of married life, she had been pregnant twice, once three years after marriage, going to full term, and, more recently, aborting at the second month. Shortly after the full time labour the uterus began to prolapse, and she required to wear some kind of support. One year before seen by the operator, she began to suffer from a painful pelvic tumour. For two weeks previous to operation the temperature ranged between 97.4° and 99.8° F., the pulse at no time exceeding 84. Menstruation was regular, but accompanied by sharp pains in the right iliac fossa. Local examination revealed an anteverted uterus with long but small cervix, the cavity measuring three and a quarter inches. To the right lay a small hard oval mass, which was freely moveable and separate from the uterus as far as one could tell bimanually.

During operation the mass was found to be a fibroid connected with the right side of the uterus by a broad band. From the outer side of the tumour sprang the right ovary and tube and a round ligament which was considerably larger than its fellow of the opposite side. The ovarian vessels on this side were also enlarged, and there was a large well marked uterine artery running up the other side.

The left cornu of this uterus was well developed, and had allowed of gestation twice as well as regular menstruation. The right cornu started as an impervious fibrous band, which expanded into the tumour from which the right round ligament and appendages sprang, and which was supplied directly by the main trunk of the right uterine artery. These facts prove that the case was one of a fibroid situated in the undeveloped horn of a uterus unicornis. The condition is very rare.

Operative Treatment of Broad-Ligament Cysts.

WATKINS, THOS. J., M.D., Chicago. "Vaginal Incision and Drainage of Simple Broad-Ligament Cysts."—*Amer. Gynæc. and Obstet. Jour.*, July, 1899.

This operation is for the treatment of simple non pendunculated cysts of the broad ligament and is not a revival of the old operation of tapping, as the most dependant part of the cyst is incised and perfect drainage secured. It is claimed that by this method we substitute a minor for a major surgical operation, as at present most operators open the abdomen and enucleate the cyst. Also, it has but little effect upon the patient's muscular or nervous system, as no organs are removed and no ligatures or sutures are used.

Refilling of the cyst, malignant disease, and difficult diagnosis, are the chief objections to this operation, but the writer has treated five cases (twice, three years ago, twice, two years ago, and once during the last year) with good results.

As to the effectiveness of simple tapping in curing cases, authorities differ. Winkel expects a cure "from puncture when the contents are thin or of low specific gravity," but Lawson Tait doubts if tapping ever cures a cyst, reporting one case which refilled years after the operation. Wells and Atlee obtained good results from removing the top of the tumour, thus making it continuous with the peritoneal cavity. Wells saying "that parovarian cysts have the peculiarity of healing entirely after evacuation." Rupture of the cyst may or may not result in cure, but the writer knows of no case where suture of the edges of the cyst wall to the sides of the abdominal incision resulted in the refilling of the cyst.

Gestation Occurring in Uterine Horn.

MANIERRE, CHAS. E., M.D., Chicago. "Cornual Pregnancy."—*Amer. Gynæc. and Obstet. Jour.*, September, 1899.

In a bicornuate uterus pregnancy may occur in either horn whether rudimentary or not. Up to 1888, thirty-four cases of pregnancy in an undeveloped uterine cornua had been reported, in twenty-four of which the horn had ruptured and so caused death. In 1897, Cullen and Wilkins, of Johns Hopkins Hospital, gave statistics of thirty-nine cases, not one of which ruptured and survived, rupture occurring as a rule at the fourth or fifth month, being a little later than in cases of ordinary tubal gestation. The fatal result very quickly follows rupture, the case upon which Cullen and Wilkins founded their report terminating fatally within two hours of the first onset of the symptoms of rupture, thus precluding the possibility of any surgical interference, the bleeding being favoured in a typical case by the horn being free or moveable.

The existence of patency of the tube previous to impregnation is doubted by many. Turner is one of the strongest advocates of the theory that the horn is not always patent before conception, as in a series of bicornuate uteri examined by him all gradations were met with from an impervious cord to a large horn with a good-sized cavity. Where the horn was closed previous to pregnancy there are two ways by which this horn could become the seat of gestation. Either a spermatozoon has travelled across the pelvic cavity from one tube to the other, and there impregnated an ovary, or else an ovum from the healthy side has become impregnated and then got into the tube of the other side. The fact that a well-developed corpus luteum was found in the side opposite to that containing the pregnancy in a large proportion of cases is strongly significant.

No method of making a definite diagnosis previous to rupture has yet been discovered, the rarity of the trouble rendering the framing of any rule for this purpose extremely difficult.

F. A. L. Lockhart.

Canadian Medical Literature.

UNDER THE CHARGE OF KENNETH CAMERON.

[The editors will be glad to receive any reprints, monographs, etc., by Canadian writers, on medical or allied subjects (including Canadian work published in other countries) for notice in this department of the *JOURNAL*. Such reprints should preferably be addressed to Dr. Kenneth Cameron, 903 Dorchester street, Montreal.]

The Canadian Practitioner and Review.

July, 1899.

1. Hyoscine. J. T. FOTHERINGHAM.
2. Surgical Gynæcology Among the Insane: Right or Wrong. A. T. HOBBS.
3. On the Use of Rubber Splints in the Treatment Following Intra-Nasal Operations. J. PRICE-BROWN.
4. Surgical Intervention in Cases of Paralysis. B. E. MCKENZIE.
5. Criminals and Their Characteristics. J. H. McCASSY.

1. Hyoscine is not used, FOTHERINGHAM thinks, as frequently as its merits, in properly selected cases, would justify. The salt commonly employed is the hydrobromide in doses usually of 1-100 of a grain. The profession at large is aware that it is used in the asylums for the insane, in manical cases, but is not aware of the valuable service it can render in general practice. Several cases widely differing in character are quoted, in which marked benefit followed its use. Its chief value is in cases of insomnia due to acute mania, delirium tremens, hysteria or similiar cases,—one might say, perhaps, cases in which there is a functional over-activity of the higher centres without undue depression of the vegetative centres. Experience has shown it to be injurious to melancholics, while in general paresis, chronic mania, epilepsy and dementia it is no better than chloral and is apt by constant use to increase excitement. Objections to the drug are, first, the uncertainty of its action, a peculiarity common to all drugs, the brunt of whose influence falls upon the nervous system. Like all drugs of the *Atropaceæ*, it dilates the pupil, dries up the throat, and if pushed may cause dizziness, delirium and an erythema of the skin. Without pitting a limited experience against Hare's dictum that "the applicability of the drug is very limited indeed, and untoward effects are common," it seems to the writer that that dictum is too strong, and that the drug is deserving of more frequent use, particularly in meningitis and in conditions of cortical over-activity, so long as we bear in mind that its untoward effects

are to be found in the three directions, of the cerebation, the circulation and the respiration.

2. HOBBS answers the criticisms of those who object to the gynaecological surgery done among the insane, and insists that "these operations are done primarily and specifically for the removal of physical disease and the promotion of bodily comfort."

3. PRICE-BROWN says that intra-nasal diseases arise when from one cause or another the septum touches the turbinated, or when the chink of the inferior meatus becomes so narrow that the mucous secretions accumulate in the passage, thereby inducing post-rhinal catarrh and preventing normal respiration on that side. In dealing with these cases it is not the operative but the post-operative treatment that he has found the most troublesome. The obstruction might be removed, but to procure smooth equable pressure upon the incised tissues during the process of healing is a much harder matter. In many cases silver tubes are useful, but in many others they are inapplicable; and in the latter class, in which the chink can only be a narrow one at best, the rubber splints, as advised by Lake, in the August number of the *Journal of Laryngology, Rhinology and Otology*, made from thick rubber sheeting, do better work than anything else at our command. Their surfaces are smooth, compressible and elastic; they can be readily cut to the required shape and they can be obtained of any thickness. Once in, the splint not only retains its place but by elastic pressure gives a smooth and even support to the raw surface to which it is applied, as well as prevents that profuse granulation which otherwise would sometimes occur. At the same time it does not retard the gradual extension of the new mucous membrane, while it moulds the tissues into a smooth and regular form.

The Canadian Journal of Medicine and Surgery.

June, 1899.

1. Abstract of an Address on a Proposed Scheme for a Dominion Medical Council. T. G. RODDICK.
2. On the Rôle of the Gonococcus in Surgical Pathology and Secondary Infections. THOMAS H. MANLEY.
3. My Lovable Friend, the Lapido-Maniac. ALBERT S. ASHMEAD.

July, 1899.

4. Report of the Laboratory of the Provincial Board of Health. JOHN J. MACKENZIE.
 5. A Medico's Visit to Richmond, Va. W. A. YOUNG.
 6. Constipation, Some of Its Effects and Its Non-Medical Treatment. E. S. PETTYJOHN.
4. J. J. MACKENZIE in his report, refers to the work done in his

laboratory. An interesting feature was the examination of four specimens from cases of suspected cerebro-spinal meningitis. The specific organism of this disease, the diplococcus intracellularis meningitidis, differs from the diplococcus of pneumonia in its staining, cultural and pathogenic characters, so that in material from the meninges it is usually possible without much difficulty to differentiate the two forms. In fatal cases of this disease, some fluid should be removed by lumbar puncture, if a *post-mortem* is not permitted, as a positive diagnosis can only be made by bacteriological examination. Physicians should recognize the importance of making as certain as possible the diagnosis in cases of this disease, since, if there is any danger of an epidemic, precautions should be taken.

He had also been engaged in making a series of investigations into the character of a bacillus found in grass, which resembles the tubercle bacillus. Its growth in culture media is not unlike that of the bacillus of tuberculosis except that it is much more luxuriant and rapid. It stains with ordinary tubercle stains, and in cover glass preparations looks so like the tubercle bacillus as to give rise to doubt in one not well acquainted with the true form. Inoculated in large doses into guinea pigs it gives rise to a disease of the nature of a pseudo-tuberculosis. He was able to show that its peculiar staining characters are due, as in the bacillus of tuberculosis, to a fatty envelope; but contrary to what occurs in bacillus of tuberculosis this fatty envelope can be readily dissolved off with alcohol, so that after boiling for ten minutes in alcohol the organism no longer takes the peculiar stain, but stains like any other form. The chief interest in this form and in others which have recently been discovered, lies in its evident rather close relationship to the bacillus of tuberculosis. Its practical importance arises from the danger of confusing it with the tubercle bacillus in butter and milk.

The Canada Lancet.

June, 1899.

1. The Early Diagnosis of Pulmonary Tuberculosis with Treatment. GILBERT GORDON.

July, 1899.

2. Pelvic Diseases in the Female Insane,—Its Significance and Our Responsibility. ERNEST HALL.

1. GORDON discusses the various signs, symptoms and methods for detecting pulmonary tuberculosis in its earliest stage. The credit of cure is due to the man who makes the diagnosis early. The blame is often on the man who fails to discover the disease until cavity formation has begun.

Dominion Medical Monthly.

June, 1899.

1. Mistakes in Gynæcology. G. R. CRUICKSHANK.
2. Clinical Notes From Johns Hopkins Hospital—Clinic of Dr. Kelly.
By ERNEST HALL.

July, 1899.

3. Fractures. E. B. SMITH.
4. The Surgical Treatment of the Insane in Private Practice. ERNEST HALL.

The Maritime Medical News.

June, 1899.

1. Tuberculin—Its Value as an Aid in Early Diagnosis of Tuberculosis. D. A. CAMPBELL.
2. Abstract on the Prevention and the Treatment of Cancer of the Uterus. A. LAPHORN SMITH.

July, 1899.

3. Does our Educational System Tend to Produce the Highest Type of Manhood in the Youth of the Country? JOHN McMILLAN.

(Being the Presidential address delivered before the meeting of the Medical Society of Nova Scotia.—Truro, July 5, 1899.)

4. Higher Medical Education. R. MACNEILL.

(Being the Presidential address, delivered before the meeting of the Maritime Medical Association.—Charlottetown, July 12, 1899.)

1. CAMPBELL strongly advocates the use of tuberculin for making an early diagnosis in cases of tuberculosis, where the symptoms and physical signs may not warrant a positive conclusion. His personal experience with the test extends over several years, and while not embracing a very large number of cases has been very satisfactory. So far he has only resorted to the test in suspected cases of serious membrane and genito-urinary tuberculosis.

Canada Medical Record.

June, 1899.

1. On the Prevention and Treatment of Cancer of the Uterus. A. LAPHORN SMITH.

July, 1899.

2. On Sanatoria—Locality and Cure. A. J. RICHER.
3. Progress of Gynæcology. A. LAPHORN SMITH.

Kingston Medical Quarterly.

July, 1899.

1. Examination of the Prepuce in Cases of Deferred Diagnosis. A. E. BARBER.
2. Clinical Demonstration in Operative Gynæcology. I. WOOD.
3. Complications of Scarlet Fever and Their Treatment. J. W. CAMPBELL.
4. Extract of Supra-renal Capsule. J. C. CONNELL.
5. Tuberculosis Prophylaxis. E. RYAN.
6. Some Clinical Notes of Surgical Cases. D. E. MUNDELL.
7. Hay Fever. J. C. CONNELL.
8. Fæces and Their Examination. W. T. CONNELL.
9. A Typical Operation for the Radical Cure of Olique Inguinal Hernia. W. G. ANGLIN.

La Revue Medicale.

12 Juillet.

1. Les Désordres Urinaires, Surtout Vésicaux, Chez la Femme. M. T. BRENNAN.

19 Juillet.

2. De l'Interrogatoire et de l'Examen de la Patiente. M. T. BRENNAN.

26 Juillet.

3. Les Irrigations Vaginales et les Hautes Injections Rectales en Gynécologie. M. T. BRENNAN.

La Clinique.

Juin, 1899.

1. Quel doit être le Traitement de Choix de l'Erysipele de la Face ? ADELSTAN DE MARTIGNY.

Juillet, 1899.

2. Correspondence : à Monsieur Le Docteur Paul Lozé (de Paris).

1. DE MARTIGNY compares the treatment of erysipelas of the face by antiseptic applications with the injection of an antistreptococcic serum, and is very strongly impressed with the curative power of Marmoreck's serum. This, however, may be combined with applications to the face of sublimate solutions. In a discussion which followed the reading of the paper, all agreed with the writer that the injection of the serum was the treatment of choice in this disease.

Reviews and Notices of Books.

TWENTIETH CENTURY PRACTICE. An International Encyclopædia of Modern Medical Science by Leading Authorities of Europe and America. Edited by THOMAS L. STEDMAN, M.D., New York. In twenty volumes. Volumes XV. and XVI., Infectious Diseases : Infectious Diseases and Malignant Neoplasms. New York, William Wood & Co. 1899.

Volumes XIII. and XIV., which deal with infectious diseases, have been reviewed in a previous number of this Journal. Volume XVI. is not published in its order. Volume XV. deals with Influenza, Typhus Fever, Plague, Glanders, Anthrax. Foot-and-Mouth Disease, Actinomycosis, Rabies, Pyæmia and Septicæmia. The article on Influenza, written by Professor Ditmar Finkler, of Bonn University, is a very complete description of this disease, containing a full account of the epidemiology, bacteriology, etc., of this wide-spread affection. While that part dealing with the treatment of influenza is very brief compared with the whole article, which embraces about 250 pages, yet in it Professor Finkler reviews the various well-recognized methods and sums up by saying that we come to the conclusion that many of the methods of treatment belong to the experimental period. He recommends that all routine measures should be avoided, and utters a warning note against the use of antipyrene and other measures for reducing the temperature, believing that such measures in many cases must have done harm.

Eduardo Licéaga, Professor in the National School of Medicine, Mexico, treats the subject of Typhus Fever. Bubonic Plague is discussed by Kitasato and Nakagawa. Considerable interest attaches to those characteristics which distinguish the plague bacillus or "bacillus pestis." Under the bacteriology of this disease the authors draw a very definite distinction between the bacillus of Kitasato and that of Yersin. Upon the relation of soil to this disease the authors give no positive teaching, dismissing this point by saying but little more than that it is very difficult to determine. That plague virus does exist in the soil, and that plague is partially at least a miasmatic disease, is affirmed by Payne in Allbutt's System of Medicine.

Frank S. Billings writes upon Glanders and Anthrax. Foot-and-Mouth disease is described by Ismar Boas, of Berlin, while Ponfick, of Breslau, writes upon Actinomycosis. Keirle contributes a valuable article on Rabies. The volume closes with a conjoint article on Pyæmia

and Septicæmia by J. McFadden Gaston and J. McFadden Gaston, Jr., of Atlanta.

In addition to articles on Diphtheria and Tetanus, volume XVI. contains articles on Cancer, Sarcoma, Malignant New Growths of the Skin, and Malignant Diseases of the Female Generative Organs.

The contributors to this volume, making it one of the most valuable of this most important work, are Victor Babes, of Bucharest ; John T. Bowen, of Boston ; Coley, Jacobi, and William H. Park, of New York ; McGuire, of Richmond, Va. ; and W. Roger Williams, of Bristol, Eng.

More than half of this volume is taken up by the articles on Cancer and Sarcoma by W. Roger Williams and William B. Coley. The general pathology of each disease is discussed by Dr. Williams. The symptomatology and treatment are dealt with by Dr. Coley. These articles are full, and give a complete review of the subject, presenting what is new in both pathology and treatment.

W. F. H.

DISEASES OF WOMEN, A Manual of Gynæcology. By F. H. DAVENPORT, A.B., M.D., Assistant Professor in Gynæcology, Harvard Medical School ; Assistant Surgeon to the Free Hospital for Women, Boston. Third Edition, Revised and Enlarged. 1898. Lea Brothers & Co., Philadelphia and New York.

This little work has now reached its third edition, and the demand for such an edition is the best proof one can have of the popularity and usefulness of the book.

It is well up to the standing of the publishing house that has placed the book on the market, being well written and well printed, and the illustrations are both numerous and useful. The book will be found of most service to the busy practitioner who desires to look up the treatment of a case, as the anatomy and pathology are not sufficiently full to commend it to the student. The teaching is sound throughout with almost no exception, except that the reviewer cannot endorse the doctrine that patients "may be taught to remove and replace the simpler forms" (of pessaries) "themselves," and also would like to have seen a word of warning added to the statement "that sometimes alcohol, especially in the form of gin, is effective" for dysmenorrhœa.

Taking it altogether, this book will prove both instructive and pleasant reading for the above mentioned class of readers.

F. A. L. L.

Society Proceedings.

CANADIAN MEDICAL ASSOCIATION.

The Thirty-Second Annual Meeting of the Canadian Medical Association was held in the Normal School Building, at Toronto, on August 30th and 31st and September 1st, 1899.

Morning Session, August 30th.—The meeting was called to order by the President, MR. IRVING H. CAMERON, of Toronto, and the Dean of Trinity College delivered the opening prayer. Dr. Arthur Jukes Johnson, Chairman of the Committee of Arrangements, then explained the programme of business and entertainments for the three days of the meeting.

The President introduced the following visitors and delegates :—

Dr. William A. Coley, of New York; Dr. George M. Gould, of Philadelphia; and Dr. A. R. Robinson, of New York; Drs. J. C. Gunn, of Pittsburg, and Thos. Turnbull, of Allegheny, delegates of the Pennsylvania State Medical Society; and Drs. Brownlaw, of Ogdensburg, and Wendell Phillips, of New York, delegates of the Medical Society of New York State. Telegrams were read by the Secretary from Drs. J. M. Beausoleil, of Montreal, the retiring president; Edward Farrell, of Halifax; and A. Laphorn Smith, of Montreal, regretting their inability to be present.

The minutes of the last Annual Meeting were read and confirmed.

A nominating committee, consisting of Drs. Roddick, J. Alex. Hutchison, McLeod, Muir, Walker, Chown, Tunstall, Bray, Taylor, A. J. Johnson, Bruce, Smith, R. W. Powell, Riordan, McNeill, and Bayne were elected.

The following papers were then called :—

(1) Dr. A. G. Nicholls, of Montreal, on "An Enquiry into the Etiology of Chronic Bright's Disease," was taken as read, Dr. Nicholls not being present.

(2) Dr. A. Laphorn Smith, of Montreal, on "Floating Kidney simulating Diseases of the Ovaries and Tubes," was taken as read.

(3) Dr. J. G. Adami, of Montreal, on "Tuberculosis in Canadian Cattle and its Prevention." The question whether bovine tuberculosis was communicable from animal to animal was answered in the affirmative, a large amount of evidence being adduced in proof. The disease was spreading with frightful rapidity in Northern and Western Europe, slaughter house results showing that from 22 to 25 per cent. of the animals were affected. Dr. Adami recommended that all animals imported from other countries, and especially from Europe, should be quar-

antined for seven weeks. This was necessary on account of the fact that infected animals which have shown reaction to tuberculin do not react again until a period of some weeks has elapsed. The loss to the farming community and to the country by the prevalence of the disease was pointed out. With regard to communicability of the disease from animals to man and the modes of infection, Dr. Adami showed that although the amount of reliable evidence is singularly slight and the difficulties in the way of determining the point great, tuberculosis could be communicated through the milk and especially where there was disease of the udder. No country in the north temperate zone was so free from the disease as Canada, only 5 per cent. of 90,000 animals tested during 1898 showing infection. Among the reasons for this healthy condition of our cattle was that the keeping of cattle within town limits cooped up in barns was almost unknown, and that in general they have abundant pasturage and range over wide areas during the year. The speaker concluded by urging that steps be taken to completely eradicate the disease in Canada, while, owing to its rarity, it was possible to do so without incurring great expense, and discussed the various means by which this might be effected. The disease might be completely eradicated in three years.

Mr. J. J. McKenzie agreed with Dr. Adami regarding the influence of the climate of Canada in tending to keep cattle in a healthy state, but thought that the method prevailing throughout the country of keeping herds in small barns closely huddled together offset this to a great extent. He cited some work done by himself supporting Dr. Adami's statement that the milk of tuberculous cows did not usually contain bacilli unless the udders were affected.

Dr. C. L. Starr, of Toronto, thought that a period of quarantine of seven weeks was open to many objections. He would prefer, instead, to rely upon a certificate of freedom given by the breeder. He considered Bang's system as the most practical way of dealing with the disease in Canada.

Dr. Turnbull, of Allegheny, Penn., considered that a quarantine of seven weeks, or even longer, was the surest way of preventing the importation of diseased cattle. He described the Pennsylvania laws on the subject, and showed how much benefit had been done in that state by enforcing them.

Dr. Bryce, Secretary of the Ontario Board of Health, thought that Dr. Adami had made altogether too favourable an estimate of the freedom of Canadian cattle from tuberculosis. He considered that infection in animals, as in man, most often took place through the respiratory tract, and nothing was of more value in preventing it than a proper system of ventilation of the byres. The milk inspection law of Ontario gave power to carry out in infected herds a system much similar to Bang's.

Dr. Roddick, M.P., of Montreal, had drawn the attention of parlia-

ment to the facts set forth in Dr. Adami's paper in connection with a series of resolutions passed by the Montreal Medico-Chirurgical Society. He had impressed on the Government the importance of allowing only properly certified veterinary surgeons to inject tuberculin and so prevent the possibility of fraud. He agreed with Dr. Turnbull that the quarantine should be made as long as possible, and also referred to the question of ventilation as of great importance. He did not think that there sufficient care taken in this regard.

Dr. Adami, in reply, admitted that the fact that his statistics were obtained partly from picked animals selected for exportation, probably stated the case too favourably, but at the same time contended that it would be impossible in any other country to find only two cases of tuberculosis among 90,000 animals selected in the same way. He related an instance to show the value of a seven weeks' quarantine over certification. A herd of shorthorns, certified on the other side to have passed the tuberculin test, were kept in quarantine until a possible immunity from injection previous to their entering the country had had time to pass off, and a second injection had shown the majority of them to be affected. The objection to Bang's system was that it would take seven or eight years at least to eradicate the disease, while by the plan proposed in his paper only three or four years would be required.

(4) Dr. J. H. Elliott, of Toronto, "The Results already achieved at the Gravenhurst Sanitarium." With an expenditure of seventy thousand dollars, accommodation had been provided for fifty patients. After a description of the internal arrangements of the building, the results for the past year were given, which may be summarized as follows :—Number admitted, 116; discharged, 83. Of these, apparently cured, 12; disease arrested, 23; marked improvement, 29; unimproved, 11; and failed, 8. A table of the increase or otherwise in weight was given, and the general results stated to be equal to those obtained in any other sanatorium on this continent.

Afternoon Session, August 30th.

(5) Dr. J. H. Richardson, of Toronto, "Christian Science." The absurdities of Christian science were shown by numerous quotations from Mrs. Eddy's book on "Science and Health." After pointing out the many ways in which statements in one part of the book were contradicted by the author herself in subsequent chapters, the speaker characterised the system as a medley of folly and blasphemy.

(6) The President, Mr. Irving H. Cameron, of Toronto, then delivered his Annual Address, the subject being "Overcrowding and the Decadence of Scholarship in the Profession." (See page 649 of the September number.)

(7) Dr. F. Montizambert, Director-General of Public Health, Ottawa,

read a paper entitled "An Experience in Formaldehyde Disinfection." (See page 769.)

(8) Dr. J. W. Stirling, of Montreal, being absent, his paper, "Recurrent Paralysis of the Third Nerve," was read by title. (See page 777.)

(9) Dr. Geo. M. Gould, of Philadelphia, read a paper entitled "Massage and the Relief of Eye Strain in the Treatment of Glaucoma," a subject which he has endeavoured to keep prominently before the profession for some years, believing that skilfully performed massage will not only act as a prophylactic against threatened glaucoma, but will even do away with the necessity of operation in some cases. One great advantage of the treatment was that it was within the power of every medical man to employ it, the patient himself being taught to make many of the necessary movements.

Dr. Reeve, of Toronto, said that glaucoma was such an insidious disease, that anything tending to act as a prophylactic would be hailed with delight by not only the specialist, but the general practitioner.

(10) A paper by Dr. N. A. Powell, of Toronto, on "The Methods and Ultimate Results of Operations for Halux Valgus," was taken as read.

(11) Dr. A. R. Gordon, of Toronto, read a paper on "Treatment of Acute Digestive Disorders of Infancy." After enumerating the various forms of acute disease met with and the symptoms produced by the products of decomposition within the intestine, he strongly urged the necessity of withholding everything by the mouth except water at first, then giving rice and albumin water, liquid peptonoids, etc., leaving milk until the last. Purgatives were of value in some cases, but antiseptics rarely of any merit.

A. L. Benedict, M.D., of Buffalo, did not agree with the author in holding intestinal antiseptics of no value. Speaking of the use of opium, which he rarely administered, he drew attention to the wonderful sedative effect of the old-fashioned remedy of catnip tea.

Dr. Holmes, of Chatham, pointed out that the pain and uneasiness which these children suffer are due to the poisons in the alimentary canal; opium is contraindicated because it not only does not lower the temperature, but prevents the elimination of these poisons. He believed strongly in the efficacy of cold baths or an ice cap with cold sponging and calomel and castor oil.

(12) Dr. Frederick Fenton, of Toronto, read a report of a "Case of Subcutaneous Emphysema." (See page 774.)

(13) Dr. G. H. Burnham, of Toronto, then read a paper entitled "The Successful Treatment of three important cases by the Combined Form of Treatment;" and (14) Dr. E. J. Barrick, of Toronto, "The Best Method of dealing with the Consumptive Poor." He suggested the establishment of a rural sanatorium in connection with each municipality, this to include, besides the buildings for incipient cases, accommodation for the

more advanced cases, and until this was possible, to utilize, as far as practicable, the various existing hospitals for the reception of such cases, and to urge upon such institutions the necessity of adopting such means of isolation as may be approved by the local boards of health. An attempt could be made to provide the necessary funds by the co-operation of the Dominion and local legislatures and the various charitable institutions. A plan of co-operation was then detailed. The above outlined plan, he thought, could be carried out as soon as public opinion was educated to the immense importance of checking consumption.

Morning Session, August 31st.

(15) Dr. A. L. DeMartigny, of Montreal, read a paper on "Erysipelas, with treatment by Marmoreck's Serum." (To appear in November issue.)

The President stated that an experience of five cases enabled him to confirm Dr. DeMartigny's findings as to the efficacy of this form of treatment.

Sir James Grant, of Ottawa, was especially interested in this subject, as long ago, in 1863, he had tried the influence of serum injections from vaccination vesicles with good results. He was glad to see that the field of usefulness for serum therapy was becoming wider.

Dr. Irwin, of Weston, related a case of scarlatina which had been cured by the use of antistreptococcic serum.

(16) A paper by Dr. T. Beath, of Winnipeg, on "Extreme Emaciation in Hysteria," was read by title.

(17) Dr. J. M. Elder, of Montreal, read a paper entitled "Complications and Treatment of Fracture of the Base of the Skull." (See page 753.)

Dr. Lett asked how long it was from the time the common carotid was tied until the mental symptoms occurred in the case alluded to by Dr. Elder. He thought that while the injury might cause no symptoms at the time, subsequent healing and contraction of the scar tissue might account for them.

Dr. Harrison had seen cases where there was perfect recovery without ligation of the artery, and yet a year later mental symptoms had intervened. He thought that the more probable explanation was the one already given.

The President had tied the common carotid on both sides in one case without causing any mental symptoms.

Dr. James Bell, of Montreal, thought the main point was not to fold one's hands and leave the case to nature, but to prevent sepsis. With regard to the remoter consequences, we could do nothing at all.

Dr. Elder, in reply, had alluded to the possible occurrence of mental symptoms on account of seeing the references in the literature to the liability of their being due to the tying of the artery.

(18) Dr. D. J. Gibb Wishart, of Toronto, read a paper on "Observa-

tions on Adenoids and Enlarged Tonsils and their Removal." (See page 764.)

Sir William Hingston, of Montreal, was sorry that Dr. Wishart did not confine himself to one or other of the two conditions, as remarks that apply to the one do not apply to the other. Adenoids he would operate on as soon as possible, while tonsils, he thought, were too frequently operated upon. In whole families he had seen the tonsils of one member after another enlarge and then the enlargement disappear. He was strongly against the use of a spray as a means of treating nasal disease, the nasal mucous membrane was most intolerant of it. Water irritated all mucous membranes, the eye, the bladder, etc. In operating he preferred to use an anæsthetic, and thought chloroform was the best, and no more dangerous than any other.

(19) Dr. J. Hunter, of Toronto, read a paper on "Tuberculosis and Insurance," which will appear in the November number of this Journal.

Dr. A. L. Benedict, of Buffalo, said that he had started out with the idea of heredity, but had relinquished it. Excluding accidents, diseases of infancy and of old age, one in four died of tuberculosis, and the hypothesis of heredity was untenable under such circumstances.

Sir William Hingston felt that the adoption of the theory of heredity had to a great extent paralyzed the efforts of physicians in the alleviation of disease. Cruveilhier, three quarters of a century ago, had shown by his experiments on the lower animals, that tuberculosis could be induced at will by confinement in dark and damp habitations, while that a cure resulted when they were again placed under favourable surroundings. Now at the close of the century we were getting back to the original views of Cruveilhier.

Sir James Grant agreed with Sir William Hingston on the question of heredity, and thought it was a favourable sign that now so much attention was being given to the prevention and cure of tuberculosis. He recommended a thorough system of Government inspection of schools, public conveyances, foods, etc., etc.

(20) Dr. Charles Smith, of Orangeville, read the report of a "Cyst of the Broad Ligament," describing the operation performed by himself, and pointing out the difficulties which might be met with in dealing with this class of case.

Afternoon Session, August 31st.

(21) Dr. George A. Peters, of Toronto, read the report of a case of "Implantation of the Ureters in the Rectum in a case of Exstrophy of the Bladder." It will be published in this journal later. The patient was exhibited.

Dr. James Bell, of Montreal, congratulated Dr. Peters on having achieved one of the surgical triumphs which compensated for many dis-

appointments. He thought that plastic operations for the relief of this condition at best gave very poor results, as one could not make a reservoir and the patient was forced to go through life with dribbling of urine.

(22) Dr. A. L. Benedict, of Buffalo, read a paper on "The Co-operation of Surgeon and Physician in Abdominal Cases," illustrating the necessity of co-operation by reference to several cases which had come under his notice.

(23) Dr. J. F. W. Ross, of Toronto, in a paper on "Gall-Bladder Surgery," presented the results of his work in this field of surgery, describing the methods of operation which he thought most suited for the various conditions met with. A small-sized Murphy's button made especially for anastomosis between the gall-bladder and the intestine was shown. The paper was discussed by Dr. Holmes, of Chatham, and Dr. James Bell, of Montreal.

(24) Dr. W. B. Jones, of Rochester, read a paper entitled "Anæsthesia by Chloroform and Ether," going over the well known arguments in favour of each. The speaker held that the anæsthetic used should be selected according to the nature of the case.

(25) The Address in Surgery was delivered by Dr. W. B. Coley, of New York, the subject being "The Radical Cure of Hernia." (See page 682 of the September number of this Journal.)

A vote of thanks was tendered to Dr. Coley for his very able address.

Morning Session, Friday, September 1st.

(26) Dr. A. R. Robinson, of New York, made "Some observations on the Treatment of Cancer," contending that arsenious acid had a selective action in destroying the cells of cancer when used locally as an escharotic. Diagrams were exhibited to show the advantage of this method over the knife, the argument being that in order to remove all the infected tissue the operator would have to remove a large area of apparently sound tissue while the selective action of the arsenious acid was exerted upon the outlying cancer cells without destroying the healthy tissues.

Dr. F. J. Shepherd, of Montreal, agreed that there were certain instances in which removal by the knife was impracticable, and in these regions, such as the face and scalp, the use of escharotics was admissible. A great many of the escharotics that were recommended were useless, and if arsenious acid had the selective action claimed for it by Dr. Robinson, it was the proper one to resort to.

(27) Dr. T. G. Roddick, M.P., of Montreal, introduced the discussion on "Dominion Registration" by explaining the scheme proposed by him, and already described in the May number of this Journal.

Dr. Williams, of Ingersoll, Ontario, moved, seconded by Dr. McNeill, of Stanley Bridge, P.E.I., that :—

Whereas, the standards of education for the profession of medicine and surgery, and the qualifications for the practice of the profession vary in each of the Provinces of Canada, and the assimilation of these standards, and, if practicable, the establishment of uniform standards throughout the Dominion, are desirable :

And whereas, in consequence of the provisions of the Acts of the United Kingdom of Great Britain and Ireland, known as the "The Medical Acts," medical and surgical practitioners who are by the law of a Province of Canada entitled to practice their profession in such province, cannot obtain the benefits of registration under the said Act, inasmuch as by the said provisions the qualifications required for such registration must be regulated by the Parliament of Canada :

And whereas, a medical and surgical practitioner, duly registered according to the law of one province of Canada, cannot legally practice in another province without being duly registered in such other province ;

And whereas, serious practical inconveniences both to the public and to the medical and surgical practitioners have arisen from the above cause :

And whereas, it is desirable to assimilate, and, if possible, to unify the various standards of qualification established by the several Provinces of Canada as conditions of admission to the study of the profession and to the practice thereof, such assimilation and unification being best attained by the establishment of one central authority with power to hold examinations of, and to establish and maintain a system of medical registration of, such persons as desire to practice the profession in more than one province of Canada :

And whereas, it is not within the legislative jurisdiction of the provinces of Canada to establish such central authority, the jurisdiction of each Province being restricted to the limits of the province and to provincial objects only :

And whereas, it is expedient to constitute a corporation in which the legislatures of the various provinces may, if they see fit so to do, vest such powers as are necessary to effect the above purposes, and the other purposes mentioned in this Act :

And whereas, the appointment of such an authority is for the general benefit of Canada, and would promote the advancement of medicine and surgery throughout the Dominion of Canada :

Therefore resolved, that this Association hereby approve of the proposed scheme which the Committee has formulated and presented at this meeting ; and

Further resolved, that Dr. Roddick be empowered and requested to continue his efforts to have the scheme completed and carried into effect by such legislation as may be found necessary.

Speeches were made in favour of the resolution by Sir James Grant

and Drs. Powell, Lafferty, and others, and the resolution on being put to vote was carried unanimously.

The report of the Nominating Committee was, at the request of many of the members who were leaving during the day, presented at this session instead of at the last session of the meeting. The report was adopted, with the exception of the substitution of the name of Dr. F. N. G. Starr as Secretary for that of the gentleman proposed by the nominating committee, on motion of Dr. McNeill, seconded by Dr. Chown.

President—R. W. Powell, Ottawa.

Vice-Presidents—Dr. S. R. Powell, Prince Edward Island.

Nova Scotia—Dr. W. J. Putnam.

Ontario—Dr. A. J. Johnson.

New Brunswick—Dr. Myers.

Quebec—Dr. A. Marsolais.

Manitoba—Dr. W. J. Neilson.

North West Territories—Dr. Hugh Bayne.

British Columbia—Dr. O. M. Jones.

Local Secretaries—Drs. H. D. Johnson, P.E.I.; G. H. Campbell, N.S.; G. H. Body, N.B.; J. A. Hutchison, Que.; W. H. Klock, Ont.; M. M. Layman, N.W.T.; Dr. McGuigan, British Columbia.

Treasurer—Dr. H. B. Small, Ottawa.

General Secretary—Dr. F. N. G. Starr, Toronto.

Evening Session, Friday, September 1st.

Dr. Thorburn presented the report of the Committee on Inebriates. It will be published later.

(28) The papers of Dr. Jas. Bell, of Montreal, on "A Case of Diffuse Hypertrophy of the Breast," (see page 772), and (29) of Dr. F. G. Finley, of Montreal, on "Pneumothorax from Gas-Producing Bacteria," were read by title. (See page 759.)

(30) Dr. R. A. Reeve, of Toronto, read a paper entitled "Hints gathered from Three Recent Ophthalmological Congresses."

(31) Dr. A. T. Hobbs, of London, Ont., read a paper on "Surgery among the Insane," showing the many difficulties encountered which do not arise in ordinary work among the sane.

(32) Dr. W. J. Wilson, of Toronto, read a paper, "Craniectomy for Microcephalus," and exhibited a patient on whom he had performed the operation with much seeming benefit.

The following papers were taken as read:—(33) Dr. D. Campbell Meyers, of Toronto, "Notes on a Case of Jacksonian Epilepsy;" (34) Dr. W. B. Thistle, of Toronto, "A Case of Morbus Cœruleus appearing at thirty-four and unassociated with any abnormal condition of the heart;" (35) Dr. F. Leonard Vaux, of Ottawa, "The Internal Staff of

Modern Hospitals, a comparison of the Canadian and American Systems ;" (36) Dr. A. Primrose, " A Note on Tuberculosis of the Cranial Bones." The latter will be published in this Journal.

The following resolutions were passed :—

(1) " That this Association wishes to place on record its high appreciation of the efforts of Dr. Roddick to bring about a General Medical Registration Act which will be applicable to the whole Dominion, and to express its deep gratitude and obligation to him for his untiring and unselfish zeal in bringing the matter to its present stage, and to express the hope that he will be able to secure the passage of an Act of the Federal Parliament at its next session which will be acceptable to all the Provinces."

(2) " That whereas, tuberculosis in cattle is disseminated by contact and infection from beast to beast ; and whereas, such bovine tuberculosis is prevalent to a very notable extent in other countries :

" Resolved, that the Canadian Medical Association is prepared to cordially support the Minister of Agriculture and the Dominion Government in all steps taken to secure a rigorous quarantine of all cattle entering the country both from across the sea and from over the border ; and further, believing that the disease is eradicable, humbly begs the Government to take steps to rid the country of this disease, believing that if this be accomplished, incalculable benefit will accrue to the great agricultural industries of this country and to the health of the Canadian people."

(3) " That in view of the generally expressed belief of the medical profession and of members of this Association that bovine tuberculosis is directly concerned in the dissemination of tuberculosis in man, and recognizing the practical character of the several scientific and sanitary measures to-day available for limiting the prevalence of the disease in cattle : the Canadian Medical Association does hereby urge that the Federal Department of Agriculture and the Agricultural and Public Health Departments of the several Provinces confer together with a view to elaborating a scheme whereby conjoint action can be instituted, so that their several existing laws can be so harmonized so as to be made operative towards the eradication of tuberculosis in Canada."

After the adoption of the report of the Auditing Committee and the usual votes of thanks to the President, Members of the Profession in Toronto, etc., the meeting adjourned to meet in Ottawa in 1900.

THE MEDICO-PSYCHOLOGICAL SOCIETY OF QUEBEC.

A meeting took place, June 22, 1899, at the Quebec Asylum, Dr. VALLEE presiding.

Letters were read from Messrs. Hurd, Ritti and Villers conveying their grateful thanks to the Society for having elected them honorary members. Dr. Guerin, of Montreal, member of the Executive Council of the Province of Quebec, was elected an honorary member.

Dr. Villers presented to the Society the following works: A. Un cas d'atrophie musculaire progressive du type de Duchenne-Aran; B. Le délire de persécution; C. Pathogénie et pronostic du délirium tremens; D. Contribution à l'emploi du Trional; E. Quelques considérations sur le choix de l'emplacement d'un sanatorium.

Report on the election of members.

Election of Officers for 1899-1900.

Dr. Burgess was elected President.

Dr. Villeneuve, Vice-President.

Mr. Chagnon (re-elected) General Secretary.

Report of Messrs. Villeneuve and Anglin on the form of the Certificate required for the Committal of the Insane.

The Committee recommended the substitution of the following forms in place of the ones actually in use.

FORM B.

MEDICAL CERTIFICATE.

I the undersigned ⁽¹⁾ of ⁽²⁾ county of _____, being a physician duly authorised do practice and habitually practising as such, do declare on oath, that I am not related, nor in the conditions prohibited by the law relating to lunatic asylums, to the proprietors of the ⁽³⁾ nor to ⁽⁴⁾ nor to ⁽⁵⁾ at ⁽⁷⁾ that I have on the ⁽⁶⁾ county of _____ separately from any other medical practitioner, visited and personally examined the said ⁽⁸⁾ is a lunatic and a proper person to be confined, and that I formed this opinion from the following facts, viz. :

A. Facts

indicating insanity observed by myself at the time of examination, viz. : ⁽⁹⁾

B. Facts communicated to me by others, viz. : ⁽¹⁰⁾

Sworn before me _____ Dated at ⁽¹²⁾ _____
at _____ on the _____
on the _____ Physician's signature.
(Signature) _____ " _____ post-office
⁽¹¹⁾ _____ address.
(Quality) _____

⁽¹⁾ Insert name and Christian name of physician.

⁽²⁾ Insert residence of physician.

⁽³⁾ Insert name of the asylum where the patient is to be sent.

⁽⁴⁾ Insert full name and Christian name of person asking for the patient's admission.

⁽⁵⁾ Insert full name and Christian name of patient. In the case of a married woman insert her maiden name in full.

⁽⁶⁾ Insert date of examination.

⁽⁷⁾ Insert place of examination.

⁽⁸⁾ Insert name of patient.

⁽⁹⁾ If the same or other facts were observed previous to the time of the examination, the certifier is at liberty to subjoin them in a separate paragraph.

⁽¹⁰⁾ Names and Christian names (if known) of informants to be given with their addresses.

⁽¹¹⁾ Justice of Peace or Commissioner of the Superior Court.

⁽¹²⁾ The date is obligatory.

N.B.—The patient must be taken to the asylum within twenty days from the date of examination.

In case of idiocy or imbecility, state whether the patient is dangerous, a cause of scandal or subject to epileptic fits, and mention the facts which show that such is the case.

In cases of organic or senile dementia, state the physical condition of the patient and whether he or she is dangerous or a cause of scandal, and mention the facts which show that such is the case.

FORM C.

ANNEX TO THE MEDICAL CERTIFICATE.

Name of patient

Residence of patient

County of

Information required in cases of application for admission of patient into the asylum.

Friends or relatives of patients (Sheriffs or Wardens, in case of insane prisoners) applying for admission into the Hospital, are particularly requested, with the aid of the Physician, to furnish full and explicit answers to the following questions :

1. What is the patient's age, to the best of your knowledge ?

2. Is the patient married, widowed or single ? How many children ?

3. Where do these children live ?

4. Where was the patient born ?

5. Are the patient's parents still living ? Where do they live ? What is their name ?

6. In what municipality was the patient when sent to the Hospital.

7. How long has the patient resided in Canada ?

8. What has been the patient's occupation or trade ? If a female or a child that of her husband or father ?

9. What are the patient's apparent means of subsistence, as well as those who are obliged by law to support ?

10. What is the patient's religion ?

11. Had the patient a common school or higher education ?

12. Is this the first attack of insanity ? If not, when did others occur, and what was their duration ?

13. When did the symptoms of this attack manifest themselves ?

14. What are the earliest symptoms of the disease ?

15. On what subjects, or in what way, is insanity now manifested ?

16. Is there any hallucination of hearing, sight, taste, touch or general sense ?

17. Has the patient shown any disposition to injure others or committed any act of violence ?
-
18. Has suicide ever been attempted ? If so, in what way ? Is the propensity now active ?
-
19. What are the patient's habits as to eating, sleeping or cleanliness ? Is there a disposition to filthy habits, destruction of clothing, breaking glass, furniture, incendiarism, etc. ?
-
20. Has or had the patient insane relatives (including grand-parents and cousins) or relatives afflicted with other nervous diseases such as epilepsy, hysteria, tic, eccentricity, neuralgia, chorea, alcoholism ? If so, state whether paternal or maternal ?
-
21. State the patient's habits as to use of liquor, opium, tobacco or other narcotic in any form, etc., etc.
-
22. Has the patient been subject to any bodily disease ? To epilepsy, suppressed eruption, discharges of sores, or ever had any injury of the head ?
-
23. What is the patient's bodily condition ? State if afflicted with any infirmity or disease in addition to insanity.
-
24. What is the supposed cause of the patient's insanity ?
-
25. If the patient has ever been an inmate of an institution for the insane, state how often, when and where.
-
26. Give name and full post-office address of the nearest relative or guardian, or friend, with whom correspondence may be conducted when necessary.
-

Dated at

1

All of the above answers are true to the best of my knowledge.

Sworn before me
at

this

1

(Physician's Signature.)

M.D.

Signature
Quality

(Justice of the peace or commissioner of the Superior Court.)

N.B.—In the case of a public patient, Forms B. and C. must be signed by the same physician, only one medical certificate being required.

In the case of a private patient, one physician must sign Forms B. and C. and another physician sign Form B. only, two medical certificates being required.

The Society adopted this report and decided to send a copy of it to the Administration, respectfully asking them to have it put in force.

Remarks on a Case of Morphinism Associated with Theft.

Dr. GEO. VILLENEUVE read a report of this case. (See page 784.)

Mal Perforant Buccal.

Mr. CHAGNON, read the following report : I have the honour to lay before you the case of an affection, described by M. Raoul Beaudet, under the name of " Mal Perforant Buccal " (*Thesis of Paris 1898*). This malady, of more or less rapid development, is characterised by the loosening and falling out of the teeth, by alveolar absorption and gingival ulceration, by the perforation, and, at times, necrosis, of the maxillary bone. Mr. Beaudet reports seven cases of perforation, three of which came under his personal knowledge. Since then, M. Letulle has pub-

lished in the *Presse Médicale* of April 2nd, 1898, another case of this singular affection. I will furnish you with a few details of the history of the case that came under my observation.

O. G., 44 years of age, about ten years ago contracted syphilis and was treated more or less regularly. Two years later he got married and had healthy children. He did not use alcoholic liquors to excess. In June, 1895, he was admitted to St. Jean de Dieu Asylum, suffering from intense maniacal excitement, which was treated by confining him to bed. At the end of two months the excitement disappeared and the physical and psychical symptoms of general paralysis, until then hidden by his state of excitement, commenced to clearly show themselves; embarrassment of speech, fibrillary twitchings of the tongue, ideas of greatness and wealth, and to crown all, a state of dementia was present.

The disease followed its course without any remarkable incidents, until about September, 1897. At this date, my attention was called to the state of his dental system, and on examination, I found that the two incisors, the canine, the two pre-molars and the first molar of the left upper maxillary were very loose, and I could easily pick them out. All the teeth were absolutely sound. The ulceration, following the loss of the teeth, and which affected the surface of the alveola, did not heal. About the middle of September, a sequestrum, which I submit for your examination, became detached. As you can see, the work of alveolar resorption is not yet much advanced. The palate roof, forming the anterior border of the maxillary sinus, also forms part of the sequestrum, and thus there was a large aperture of communication between the sinus and the buccal cavity. Two months later the ulceration was cicatrized.

Present condition.—In the inferior jaw all the teeth are sound, and there are none wanting. The two pre-molars and the right canine of the upper jaw are decayed, the second and third left molars, as well as the first right molar, are loose, but perfectly sound. There exists no alveolar pyorrhœa, neither does any trace of ulceration appear, except a small opening, which would not admit the probe.

It was impossible to inquire into his sensibility owing to the profound state of dementia which rendered him incapable of understanding the questions put to him. His physical condition is still good. He is only troubled with weakness of the limbs.

I would draw you attention to the rapid evolution of the affection, the sequestrum becoming detached less than two months after the falling out of the teeth; this would explain the rather slow degree of alveolar absorption. But, on the other hand, the disease continues its course without doubt, as evidenced by the fact that the second and third left molars and the first right molars are actually loose. I believe it would be interesting to follow the successive stages of this affection.

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THE TORONTO MEETING OF THE CANADIAN MEDICAL
ASSOCIATION.

The Thirty-second Annual Meeting of the Canadian Medical Association at Toronto was memorable both by the large number in attendance—a number far in excess of that of previous meetings—but also most especially by the definite and unanimous pronouncement of those present in favor of the suggested scheme for Dominion Registration. The hard and disinterested labors of our colleague, Dr. Roddick, through these last years, his anxious attempts to fuse together all interests and to remove all possible grounds of dissent, have at last borne good fruit, and we appreciate and join heartily with the resolution passed at the concluding meeting: “That this Association wishes to place on record its high appreciation of the effort of Dr. Roddick to bring about a general medical registration act which will be applicable to the whole Dominion, and to express our deep gratitude and obligation to him for his untiring and unselfish zeal in bringing the matter to its present stage.” With the whole profession united, there should be no obstruction to the passage of an Act by the next session of the Federal Parliament, and, at length, practically all the inconveniences, hardships and the most serious objections in the present condition of affairs would seem about to be removed. In every respect the scheme of Dominion Registration proposed, promises to work for the advancement of medicine and surgery throughout the Dominion.

The one live topic interesting our profession throughout the world at the present moment, formed, almost naturally, a prominent subject of discussion at the Meeting: we need scarce say that we refer to Tuberculosis. The questions of inheritance and non-inheritance of the disease and its bearing upon insurance, brought up by Dr. Hunter; of sanitarium treatment and its results, introduced by Dr. J. H. Elliot; of the best methods of dealing with consumptive poor, introduced by Dr. E. J.

Barrick ; and of bovine tuberculosis and its eradication, brought forward by Professor Adami, all, by the discussion they excited, showed the strong and keen interest of the profession here in the importance of the subject, and of the three general resolutions passed by the meeting besides that upon Dominion Registration, two bore upon this subject, and will, we trust, strengthen the hands of both the Federal and the Provincial Governments in dealing with this disease.

To the Presidential address and the addresses of Dr. Fotheringham in medicine and Dr. W. B. Coley, of New York, in surgery, and their excellence, we need not here refer, for our readers have studied them in full in our preceding number.

Dr. Geo. Gould, of Philadelphia, and Dr. A. R. Robinson, of New York, materially added to the value of the meeting by their papers upon the treatment of Glaucoma and of Cancer respectively. Nor were any of the other papers delivered by members of the Association one whit behind, rather they were in advance, of those delivered at previous meetings. We wish, however, that the crowded state of the programme had permitted of animated discussion and greater interest being evidenced in connection with the various topics brought forward.

Upon this, as upon previous occasions, our Toronto *confrères* have made the meeting of the Association coincide with the great annual exhibition in their city. We are inclined to question whether this is a wise policy ; the matter we own is debatable. Undoubtedly the added attraction of the Fair brings into Toronto a large number of practitioners from all over Ontario, men who might not attend were the meeting the sole event, and thereby certainly the number registering is materially increased ; but at the same time the attendance at the meetings becomes very irregular. Now frankly, we must admit that the main benefit to be obtained from this and kindred medical meetings, is not gained from the hearing of papers—those papers can be better read and studied when they appear in the journals afterwards ; only when there are provided debates upon live topics, upon matters of general medical politics, is it absolutely essential that there should be full attendance at the sessions. Again, we might add, in addition, when distinguished strangers have been invited from a distance, to address the society, then as a matter of courtesy the attendance should be large. The main benefit lies in the meeting of old friends, the making of new ones, the pleasant intercourse of the members, and in private rather than public interchange of ideas.

While admitting all this, it has also to be acknowledged that if the attendance be scanty, there is a depressing effect upon the readers of the papers, and unless papers were read there would be no concrete reason for summoning a meeting. Thus, while admitting that it is somewhat of a task upon the individual hearer to ask him to attend regularly at

the sessions, for the success of the meeting regular attendance is advisable.

This, however, is not the main objection to holding the meeting during Exhibition week. A far more serious objection is, that naturally, when the meeting is held in any big city, one of its main attractions is the opportunity afforded to those from outside to meet intimately, to listen and to gain instruction from, the leading men in that city, and to see their methods of work. In fact, to make a meeting a thorough success, the leaders in any city in which such meetings are held should put themselves out in order to ensure such success in every way, both professionally and socially.

Now, to hold a meeting during the exhibition week is a serious hindrance to the fulfilment of such duties, for during this week, not only do practitioners come to Toronto, but laymen from all over the district take advantage of the cheap fares with the added attractions of the exhibition, to come into the city to consult the heads of the profession. Indeed, it is well known that one deservedly popular consultant and specialist, whom all in Canada esteem, lives virtually in a state of siege during fair week. Patients collect hours before his office opens and, not to lose an opportunity of seeing him, camp out in the surrounding streets, taking their meals *al fresco*, and of not a few others the same is true to but a little less extent. The consequence of this is that those with whom visitors are most anxious to come into contact, with a few rare exceptions among the most devoted and public spirited, are conspicuous by their hurried and flash-like presence. This ought not to be. A meeting in which the leading practitioners do not take an active part professionally and socially, cannot be regarded as wholly successful.

Nor, again, (though this is a minor point), is it a wise policy to place or put down for reading, at the very first session, the papers of members who come from the greatest distance, although we presume papers are arranged on the programme in the order in which notice of them is received by the secretary. We may here again be mistaken, for as a matter of fact the attendance at Toronto at the very first meeting was excellent. Yet we are inclined to think that as a matter of principle, those coming from the greatest distance—those who have, as a consequence, been put to the greatest trouble—should have their papers delivered at sessions at which there is the greatest probability of a good attendance.

We trust that in making these remarks, no offence will be taken, for over and above all, our feeling is, and we hope we have shown it, one of pleasure that the meeting was so good. It marked an advance in many respects. At the same time, we are so anxious to see the annual meetings of the Canadian Medical Association become more and more popular,

and we so thoroughly believe that the Association can be of prime service to our community, that we do not hesitate to point out wherein the meetings can be made of yet higher value.

ON METROPOLITAN PROVINCIALISM AND EUROPEAN MEDICAL SCHOOLS.

Each succeeding year there return to us a certain number of our young graduates from the various Canadian medical schools, who have spent one or two "Wanderjahre" across the sea, passing from one well-known medical centre to another. It is remarkable to find the consensus of opinion expressed by these with regard to the relative advantages afforded here and there. For example, all are impressed by the wonderful amount of material of all kinds which pours into Vienna; the opportunities there afforded for seeing an extraordinary number of cases of one or other malady; the difficulty of gaining much good from this wealth of material on account of its very wealth, there being too little time to study thoroughly individual cases and, as a consequence, the difficulty of gaining full advantage from one's stay there, unless indeed one places himself in the hands of some Privat-Dozent who is in general a Jew, bright, and an excellent teacher, but who undoubtedly is stimulated by the fee of quite respectable proportions, which he demands in order to insure his full attention.

In Berlin, we learn, material is not so abundant; the lectures given by the chiefs of the various clinics are, if possible, of a yet higher order of excellence than those in Vienna; but the system of paid private tuition has not developed to the same extent; and, again, owing to the vast number of students, the foreigner has not the like opportunity of gaining benefit, however much he be prepared to make the best use of his time. While if he be so fortunate as to gain a place in one of the laboratories and there perform original work, there is,—we say it regretfully, with the facts before us,—an undoubted danger that unless he follow the example of other workers in the laboratory and keep his results religiously to himself, he may be dissuaded from pursuing his investigations, already carried to a certain point, only to discover that after a short interval, other workers in the laboratory take up that work and publish it as original without a single indication of their indebtedness.

It is at the smaller German universities that we find our graduates reaping the fullest benefit. There, students are relatively few; the professors are keenly anxious to gain something more than a local reputation; they do not feel that their position is as yet wholly established; their pride is touched by the fact that those from across the sea come to work under them; and there is, in general, a remarkable willingness to aid Canadian or American students in every possible way. Men

appreciate and remember Prague, Göttingen, Freiburg and Wurzburg more highly than they do Vienna or Berlin.

With regard to Paris, it is difficult to arrive at any definite conclusion. As in private duty bound, our French Canadian students regard Paris as their Mecca, there is for them no school but one school. Doubtless those who stay there for some little period and who obtain appointments in the hospitals (more especially in connection with specialties in medicine), return to us remarkably well posted in one or other branch, or it may be, in several branches of professional knowledge. But it must equally be acknowledged that a large number of those who perform the pilgrimage, whether as a consequence of natural incapacity to profit by the opportunity, or from appreciation of the advantages other than medical which Paris affords, return little better qualified than they were before they left, or at the least, do not subsequently manifest any superior ability. Too few of our English-speaking students seek Paris for us, through them, to make any statement with regard to the school which forty, or twenty years ago was the great medical centre. This, it seems to us, is a pity, for while, judging from an inspection of the Paris hospitals and operating rooms, French surgery is far behind that of the American and German centres, there has undoubtedly of late years been a renaissance in many branches. In nervous diseases, now as when Charcot was at the height of his fame, Paris affords wonderful clinical opportunity, while in pathological anatomy of the nervous system, we doubt if there be any higher authorities than Marie and his associates. So also in such specialties as rhinology, ophthalmology and otology, not a little is to be learned from the French clinical methods, while in bacteriology, the course given by Roux at the Institut Pasteur is, we learn, much superior to any course in Germany or elsewhere upon the continent.

It is, however, when we come to enquire from our returned graduates their impression concerning London, that we meet with the most remarkable unanimity of impression. As Paris is the Mecca of the French speaking, so should London be the Mecca of the English speaking Canadian. Naturally, all gravitate there first, but few, sadly few, remain. It is not that they are not anxious to do so, not that they are incapable of gaining benefit, not that they would not prefer to remain for months gaining an increased knowledge at the feet of the great physicians and surgeons whose names have become household words to them. But they are forced to leave unless they are willing to waste their time, or unless they are wishful to revert for a season to the position of the undergraduate and take up such subjects as anatomy and physiology for the conjoint examination of the Royal Colleges.

To this broad statement there are, so far as we know, two exceptions :—the ophthalmological material at Moorfields is magnificent, and there

Canadian students receive a hearty welcome and find the staff, one and all, most anxious to teach and to yield all the aid and all the particulars possible. In this respect Moorfields has for long years stood out in Canadian estimation head and shoulders above the other hospitals in London. Next in repute comes the Great Ormond Street Hospital for Children. At one period St. Thomas' Hospital enjoyed a like popularity and not a few of the leading physicians in this city and elsewhere in Canada have owed to Murchison more than they can well declare. But Murchison is long dead and, since then, no single man has arisen either at St. Thomas' or elsewhere in London to take his particular place.

Canadians may go to London willing to pass from hospital to hospital, prepared to spend their days journeying from one end to the other of the great city, now putting in a morning at Guy's, now rushing across to St. George's, now to Bart's and now to Great Ormond Street or Queen's Square. But even if the inevitable waste of time consumed in these journeys does not deter them, they very soon find that the graduate visitor to a clinic or a lecture or an out-patient room, is regarded as "*de trop*" and what is more,—and more astonishing,—that the teaching is with some few rare exceptions, somewhat perfunctory and not of the best, nor as fresh and up to date as that obtainable even in Toronto or Montreal.

For, to come to the root of the matter, it is undoubtedly the fact that London of all the great cities of the world is the most provincial in matters medical. Each great hospital is a separate entity bound up in itself and its own traditions. From the moment a student enters Bart's, Guy's or St. Thomas' he undergoes sure saturation with the belief that there is no other hospital equal to it,—that the opinions afforded by its teachers are the only correct opinions,—that the traditional and peculiar method of performing this or that operation or of treating this or that disease, is the only proper method, and, as the members of the staff are in the main part drawn from those who have been students of the hospital, and have spent no time in other schools at home or abroad, it follows that the inevitable tendency is for teachers, in their methods and in their teaching, to become hidebound in antiquity and conservatism, save when, in some one or other direction, the innate power of the man raises him above his environment.

And the pity of it is that those teachers and members of the staff are originally some of the most brilliant of British youth. The natural capacity and the education necessary for a man to obtain a leading position in London must be singularly high. But, in general, as we state, from their training, those who become teachers are too satisfied with the position and the traditions of their respective schools to be willing to agree to absorb and to deliver to their students the advances made in diagnosis and treatment, either at rival hospitals or in the world at

large. What is more, save for a rare Horsley, the ordinary London physician or surgeon on a staff stands aghast at the idea of spending from three to six months every few years studying and examining the methods pursued in other medical centres. It may not be that he considers it a little beneath his dignity to place himself in a position of a learner under colleagues elsewhere, but he has the firm belief that were he to leave London for more than three or four weeks at a time, his practice would be irretrievably ruined. Thus it comes to pass that an American or Canadian physician, not endowed it may be with the same natural capacity, not possessing the same amount of clinical or consultant material as a basis, nor again having had the same thorough preliminary education, from his receptivity and his willingness to spend long months abroad every other year or so, seeing all that is new and good, may really and truly become a better and more capable teacher than the members of a London hospital staff.

It is this same conservatism and the complete satisfaction that a Bart's man, for example, has in devoting himself only to Bart's men, that makes him ungracious to foreign and colonial students, or if not ungracious, at least careless of affording them any advantages. It is this same conservatism which has rendered the London Post-Graduate Course a relative failure. While some, we learn, have delivered lectures of the highest order there, a large number of the lectures have been indifferent, not only in the matter but in the manner of the lecturers, whose hearts have been more in hospital work, so much so that they have not greatly cared to exert themselves for and to make an impression upon those coming from outside.

Lastly, and notoriously, no opportunity is given in London for a man to take up advanced clinical work or research in the hospital wards. We were talking recently to one of the greatest living London physicians, a man whose published writings are remarkable for mastery of his subject and for depth of thought, one who, further, is regarded justly as a great teacher, and, knowing the valuable material contained in his wards and the utter impossibility that he in his active life could either personally study and record, or cause his resident physicians with the amount of work on their hands to study and record his cases, we asked him why he did not incite young graduates, whether settled in London or coming from abroad, to work under his direction,—why, in short, he, with his splendid opportunities, did not attempt to establish, in his hospital, a school of advanced clinical research. The idea seemed absolutely novel to him. Evidently he had never considered such a possibility. His immediate answer was that it would be impossible for him to do any such thing; that he doubted whether the hospital would permit it, because neither in that nor in any other hospital had such a

thing ever been attempted. In short, the idea was, to our surprise, considered altogether too revolutionary.

To repeat, it is this narrow spirit of conservatism which repels our students from studying in London. If the new central school which is now contemplated is to be a success, it can only be this by so arranging that positions in connection therewith are held to be more honourable than those in connection with any hospital medical school, however noble its traditions or however great its name. Otherwise the work performed will be perfunctory and the scheme will prove a failure.

Something that will fuse the teaching staffs of the various hospitals is a crying need in London, for it is only by removing this provincialism that London can take its right place at the forefront in the diffusion of medical knowledge. So great is its wealth in material, that we outsiders of the Empire have a right to demand that it rise equal to its great opportunities.

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Original Communications.

AFTER TWENTY-FIVE YEARS.

AD ADDRESS AT THE OPENING OF THE SESSION OF THE MEDICAL
FACULTY, MCGILL UNIVERSITY, SEPT. 21st, 1899.

BY

WILLIAM OSLER, M.D., F.R.S.,

Professor of Medicine, John Hopkins University, Baltimore, Md.

I.

From two points of view alone have we a wide and satisfactory view of life—one, ere the dew of youth has been brushed off, as we stand at the foot of the hill, eager for the journey, amid the glorious tints of the early morn ; the other, wider, perhaps less satisfactory, as we gaze from the summit, at the lengthening shadows cast by the setting sun. From no points in the ascent have we the same broad outlook, as the steep and broken pathway affords few halting places with an unobscured view. You remember in the ascent of the Mountain of Purgatory, Dante, after a stiff climb, reached a high terrace encircling the hill, and sitting down turned to the East, remarking to his good leader—"all men are delighted to look back." So on this occasion, from the terrace of a quarter of a century, I am delighted to look back, and to be able to tell you of the prospect.

Twenty-five years ago this Faculty, with some hardihood, selected a young and untried man to deliver the lectures on the Institutes of Medicine. With characteristic generosity the men who had claims on the position in virtue of service in the school, recognizing that the times were changing, stepped aside in favor of one who had had the advantage of post-graduate training in the subjects to be taught. An experiment on the part of the Faculty, enthusiasm, constitutional energy, and a fondness for the day's work on my part led to a certain measure of success. I have tried to live over again in memory those happy early

days, but by no possible effort can I recall much that I would fain remember. The dust of passing years has blurred the details, even in part the general outlines of the picture. The blessed faculty of forgetting is variously displayed in us. In some, as in our distinguished countryman, John Beattie Crozier, it is absent altogether, and he fills chapter after chapter with delightful reminiscences and descriptions of his experiences and mental states.* At corresponding periods—we are about the same age—my memory hovers like a shade about the magic circle which Ulysses drew in Hades, but finds no Tiresias to lift the veil with which oblivion has covered the past. Shadowy as are these recollections, which,

“be they what they may
Are yet the fountain light of all our day,
Are yet a master light of all our seeing,”

they are doubly precious from their association with men who welcomed me into the Faculty, now, alas ! a sadly reduced remnant. To them—to their influence, to their example, to the kindly encouragement I received at their hands—I can never be sufficiently grateful. Faithfulness in the day of small things may be said to have been the distinguishing feature of the work of the Faculty in those days. The lives of the senior members taught us youngsters the lesson of professional responsibility, and the whole tone of the place was stimulating and refreshing. It was an education in itself, particularly in the amenities of faculty and professional life, to come under the supervision of two such Deans as Dr. George Campbell and Dr. Palmer Howard. How delightful it would be to see the chairs which they adorned in the school endowed in their memories and called by their names !

One recollection is not at all shadowy—the contrast in my feelings to-day only serves to sharpen the outlines. My first appearance before the class filled me with a tremulous uneasiness and an overwhelming sense of embarrassment. I had never lectured, and the only paper I had read before a society was with all the possible vaso-motor accompaniment. With a nice consideration my colleagues did not add to my distress by their presence, and once inside the lecture room the friendly greeting of the boys calmed my fluttering heart, and, as so often happens, the ordeal was most severe in anticipation. One permanent impression of the session abides—the awful task of the preparation of about one hundred lectures. After the ten or twelve with which I started were exhausted I was on the treadmill for the remainder of the session. False pride forbade the reading of the excellent lectures of my predecessor, Dr. Drake, which, with his wonted goodness of heart, he had offered.

* *My Inner Life*, Longmans, 1898.

I reached January in an exhausted condition, but relief was at hand. One day the post brought a brand-new work on physiology by a well-known German professor, and it was remarkable with what rapidity my labors of the last half of the session were lightened. An extraordinary improvement in the lectures was noticed; the students benefitted, and I gained rapidly in the facility with which I could translate the German.

Long before the session was over I had learned to appreciate the value of the position entrusted to me, and sought the means to improve the methods of teaching. I had had the advantage of one of the first systematic courses on practical physiology given at University College, London, a good part of which consisted of lessons and demonstrations in histology. In the first session, with but a single microscope, I was only able to give the stock display of the circulation of the blood, ciliary action, etc., but a fortunate appointment as physician to the smallpox department of the General Hospital carried with it a salary which enabled me to order a dozen Hartnack microscopes and a few bits of simple apparatus. This is not the only benefit I received from the old smallpox wards, which I remember with gratitude, as from them I wrote my first clinical papers. During the next session I had a series of Saturday demonstrations, and gave a private course in practical histology. One grateful impression remains—the appreciation by the students of these optional and extra hours. For several years I had to work with very scanty accommodation, trespassing in the chemical laboratory in winter, and in summer using the old cloak room downstairs for the histology. In 1880 I felt very proud when the faculty converted one of the lecture rooms into a physiological laboratory and raised a fund to furnish and equip it. Meanwhile I had found time to take my bearings. From the chair of the Institutes of Medicine both physiology and pathology were taught. It has been a time-honoured custom to devote twenty lectures of the course to the latter, and as my colleagues at the Montreal General Hospital had placed the post-mortem room at my disposal I soon found that my chief interest was in the pathological part of the work. In truth, I lacked the proper technique for practical physiology. For me the apparatus never would go right, and I had not a *Diener* who could prepare even the simplest experiments. Alas! there was money expended (my own usually, I am happy to say, but sometimes my friends', as I was a shocking beggar!) in apparatus that I never could set up, but over which the freshmen firmly believed that I spent sleepless nights in elaborate researches. Still one could always get the blood to circulate, cilia to wave and the fibrin to digest. I do not think that any member of the ten successive classes to which I lectured understood the structure of a lymphatic gland, or of the spleen, or of the placental circulation. To those structures I have to-day

an ingrained hatred, and I am always delighted when a new article comes out to demonstrate the folly of all preceding views of their formation. Upon no subjects had I harder work to conceal my ignorance. I have learned since to be a better student, and to be ready to say to my fellow students "I do not know." Four years after my college appointment the Governors of the Montreal General Hospital elected me on the visiting staff. What better fortune could a young man desire! I left the same day for London with my dear friend, George Ross, and the happy days we had together working at clinical medicine did much to wean me from my first love. From that date I paid more and more attention to pathology and practical medicine, and added to my courses one in morbid anatomy, another in pathological histology, and a summer class in clinical medicine. I had become a pluralist of the most abandoned sort, and by the end of ten years it was difficult to say what I did profess, and I felt like the man to whom Plato, in *Alcibiades II.* applies the words of the poet:—

"Full many a thing he knew ;
But knew them all badly."

Weakened in this way, I could not resist when temptation came to pastures new in the fresh and narrower field of clinical medicine.

After ten years of hard work I left this city a rich man, not in this world's goods, for such I have the misfortune—or the good fortune—lightly to esteem, but rich in the goods which neither rust nor moth have been able to corrupt,—treasures of friendship and good fellowship, and those treasures of widened experience and a fuller knowledge of men and manners which contact with the bright minds in the profession necessarily entails. My heart, or a good bit of it at least, has stayed with these treasures. Many a day I have felt it turn towards this city to the dear friends I there left, my college companions, my teachers, my old chums, the men with whom I lived in closest intimacy, and in parting from whom I felt the *chordæ tendineæ* grow tense.

II.

Twenty-five years ago the staff of this school consisted of the historic septenary, with one demonstrator. To-day I find on the roll of the Faculty 52 teachers. Nothing emphasizes so sharply the character of the revolution which has gradually and silently replaced in great part for the theoretical, practical teaching, for the distant, cold lecture of the amphitheatre the elbow to elbow personal contact of the laboratory. The school, as an organization, the teacher and the student have been profoundly influenced by this change.

When I joined the faculty its finances were in a condition of delight-

ful simplicity, so simple indeed that a few years later they were intrusted to my care. The current expenses were met by the matriculation and graduation fees and the government grant, and each professor collected the fees and paid the expenses in his department. To-day the support of the laboratories absorbs a much larger sum than the entire income of the school in 1874. The greatly increased accommodation required for the practical teaching has made endowment a vital necessity. How nobly, by spontaneous gifts and in generous response to appeals, the citizens have aided the efforts of this faculty I need not remind you. Without it McGill could not have kept pace with the growing demands of modern methods. Upon one feature in the organization of a first-class school permit me to dwell for a moment or two. The specialization of to-day means a group of highly trained experts in the scientific branches, men whose entire energies are devoted to a single subject. To attain proficiency of this sort much time and money are required. More than this, these men are usually drawn from our very best students, with minds above the average. For a majority of them the life devoted to science is a sacrifice : not, of course, that it is so felt by them, since the very essence of success demands that in their work should lie their happiness. I wish that the situation could be duly appreciated by the profession at large, and by the trustees, governors and the members of the faculties throughout the country. Owing these men an enormous debt, since we reap where they have sown, and garner the fruits of their husbandry, what do we give them in return ? Too often beggarly salaries and an exacting routine of teaching which saps all initiative. Both in the United States and Canada the professoriate as a class, the men who live by college teaching, is wretchedly underpaid. Only a few of the medical schools have reached a financial position which has warranted the establishment of thoroughly equipped laboratories, and fewer still pay salaries in any way commensurate with the services rendered. I am fully aware that with cobwebs in the purse not what a faculty would desire has only too often to be done, but I have not referred to the matter without full knowledge, as there are schools with large incomes in which there has been of late a tendency to cut down salaries and to fill vacancies too much on Wall Street principles. From Harvard comes a most encouraging announcement. By the will of the late Dr. Calvin Ellis the Medical School receives nearly half a million dollars, the income from which is to be used in raising the salaries of the scientific chairs to \$5000 per annum. And not for relief of the pocket alone would I plead. The men in charge of our Canadian laboratories are overworked in teaching. A well organized staff of assistants is very difficult to get, and still more difficult to get paid. The salary of the professor should be in many cases that of the first assistant. When the entire energy of a laboratory

is expended on instruction, re-earch, a function of equal importance, necessarily suffers. Special endowments are needed to meet the incessant and urgent calls of the scientific staff. It is gratifying to know that certain of the bequests to this school have of late been of this kind, but I can safely say that no department is as yet fully endowed. Owing to faulty conditions of preliminary education the medical school has to meet certain illegitimate expenses. No one should be permitted to register as a medical student who had not a good preliminary training in chemistry. It is an anomaly that our schools should continue to teach general chemistry, to the great detriment of the subject of medical chemistry, which alone belongs in the curriculum. Botany occupies a similar position.

But *the* laboratories of this medical school are not those directly under its management. McGill College turned out good doctors when it had no scientific laboratories, when the Montreal General Hospital and the University Maternity were its only practical departments. Ample clinical material and good methods of instruction gave the school its reputation more than fifty years ago. Great as has been the growth of the scientific half of the school, the all-important practical half has more than kept pace. The princely endowment of the Royal Victoria Hospital by our large-hearted Canadian Peers has doubled the clinical facilities of this school, and by the stimulus of a healthy rivalry has put the Montreal General Hospital into a condition of splendid efficiency. Among the many changes which have occurred within the past twenty-five years, I would place these first in order of importance, since they assure the continued success of McGill as a school of practical medicine.

Equally with the school as an organization, the teacher has felt deeply the changed conditions in medical education, and many of us are much embarrassed to know what and how to teach. In a period of transition it is not easy to get *orientiert*. In some subjects fortunately there is but the single difficulty—what to teach. The phenomenal strides in every branch of scientific medicine have tended to overload it with detail. To winnow the wheat from the chaff and to prepare it in an easily digested shape for the tender stomachs of first and second year students taxes the resources of the most capable teacher. The devotion to a subject, and the enthusiasm and energy which enable a man to keep abreast with its progress, are the very qualities which often lead him into pedagogic excesses. To reach a right judgment in these matters is not easy, and after all it is in teaching as Izaak Walton says of angling, "Men are to be born so, I mean with inclinations to it." For many it is very hard to teach down to the level of beginners. I was told a good story illustrating this a few weeks ago. One of the most distinguished—no, the most distinguished of Scotch professors had gone off for a few weeks

during the term, leaving his first assistant, named Day, in charge of his work. As is not infrequently the case, the junior caught the ear of the class better than the master. On the blackboard just before the Professor returned one of the students wrote, "Work while it is Day, for the (k)night cometh when no man can work." The old time lecture room teacher is rapidly giving place to the demonstrator and the class instructor. Professors, like doctors, may be divided into four classes. It was a parson (Mr. Ward, Rector of Stratford-on-Avon shortly after Shakespeare's day) who gave the well-known libellous division of doctors :— "first, those that can talk but doe nothing ; secondly, some that can doe but not talk ; third, some that can both doe and talk ; fourthly, some that can neither doe nor talk—and these get most monie." Of professors the first is the man who can think but who has neither tongue nor technique. Useless for the ordinary student, he may be however the leaven of a faculty and the chief glory of his university. A second variety is the phonographic professor, who can talk but who can neither think nor work. In the old régime he repeated year by year the same lecture. A third is the man who has technique but who can neither talk nor think ; and a fourth is the rare professor who can do all three—think, talk and work. With these types fairly represented in a faculty, the diversities of gifts only serving to illustrate the wide spirit of the teacher, the Dean at least should feel happy.

But the problem of all others which is perplexing the teacher to-day is not so much what to teach, but how to teach it, more especially how far and in what subjects the practical shall take the place of didactic teaching. All will agree that a large proportion of the work of a medical student should be in the laboratory and in the hospital. The dispute is over the old-fashioned lecture, which has been railed against in good set terms, and which many would like to see abolished altogether. It is impossible, I think, to make a fixed rule, and teachers should be allowed a wide discretion. With the large classes of many schools the abolition of the didactic lecture would require a total reconstruction of the curriculum and indeed of the faculty. Slowly but surely practical methods are everywhere taking the place of theoretical teaching, but there will, I think, always be room in a school for the didactic lecture. It is destined within the next ten years to be much curtailed, and we shall probably, as is usual, go to extremes, but there will always be men who can present a subject in a more lucid and attractive manner than it can be given in a book. Sir William Gairdner once remarked that the reason why the face and voice of the teacher had so much more power than a book is that one has a more living faith in him. Years ago Murchison (than whom Great Britain certainly never had a more successful teacher of medicine) limited the lecture in medicine to the consideration of rare

cases, and the prominent features of a group of cases, and to questions of prognosis which cannot be discussed at the bedside. For the past four years in the subject of medicine I have been making an experiment in teaching only by a weekly examination on a set topic, by practical work in the wards, in the out-patient room and the clinical laboratory, and by a weekly consideration in the amphitheatre of the acute diseases of the season. With a small class I have been satisfied with the results, but the plan would be difficult to carry out with a large body of students.

The student lives a happy life in comparison with that which fell to our lot thirty years ago. Envy, not sympathy, is my feeling towards him. Not only is the *ménu* more attractive, but it is more diversified and the viands are better prepared and presented. The present tendency to stuffing and cramming will be checked in part when you cease to mix the milk of general chemistry and botany with the proper dietary of the medical school. Undoubtedly the student tries to learn too much, and we teachers try to teach him too much—neither, perhaps, with great success. The existing evils result from neglect on the part of the teacher, student and examiner of the great fundamental principle laid down by Plato—that education is a life-long process, in which the student can only make a beginning during his college course. The system under which we work asks too much of the student in a limited time. To cover the vast field of medicine in four years is an impossible task. We can only instil principles, put the student in the right path, give him methods, teach him how to study, and early to discern between essentials and non-essentials. Perfect happiness for student and teacher will come with the abolition of examinations, which are stumbling blocks and rocks of offence in the pathway of the true student. And it is not so Utopian as may appear at first blush. Ask any demonstrator of anatomy ten days before the examinations, and he should be able to give you a list of the men fit to pass. Extend the personal intimate knowledge such as is possessed by a competent demonstrator of anatomy into all the other departments, and the degree could be safely conferred upon certificates of competency, which would really mean a more thorough knowledge of a man's fitness than can possibly be got by our present system of examination. I see no way of avoiding the necessary tests for the license to practice before the provincial or state boards, but these should be of practical fitness only, and not, as is now so often the case, of a man's knowledge of the entire circle of the medical sciences. It is satisfactory to know that close attention is being paid to the problem how to relieve the present congested state of the medical curriculum, and a number of interesting experiments are in operation. Of the special measures of relief which have been proposed the concentration of courses and a wide system of electives in the special branches are the most impor-

tant. A strong feeling prevails that we tie up the student too tightly in leading strings, and do not allow, particularly to good men, sufficient liberty. In our present system we make no distinction whatever between the poor, the mediocre and the good student. It is interesting to note that the question has been dealt with most fully and most warmly in the interests of the practical student by two of the leading scientific teachers in the United States, Dr. Henry P. Bowditch, of Harvard (*Boston Medical and Surgical Journal*, Dec. 29th, 1898), and my colleague at the Johns Hopkins, Dr. Mall (*Philadelphia Medical Journal*, April 1st, 1899). Their papers are to be carefully pondered by all teachers who feel that reform is necessary. I would commend them particularly to the younger men, in whose hands alone such radical changes can be carried out. A man who has been teaching for twenty-five years is rarely in a position to appreciate the necessity of a change, particularly if it touches his own special branch.

(Dr. Osler then referred briefly to the subject of Dominion Registration, and expressed the hope that the necessary legislation would be carried through at an early date. He hoped that it might prove a prelude to a more extensive measure of Imperial Registration which would enable registered graduates of Canadian universities to practice in any part of Her Majesty's possessions.)

III.

But what is most important in an introductory lecture remains to be spoken, for dead indeed would I be to the true spirit of this day, were I to deal only with the questions of the curriculum and say nothing to the young men who now begin the serious work of life. Personally, I have never had any sympathy with the oft repeated sentiment expressed originally by Abernethy, I believe, who, seeing a large class of medical students, exclaimed, "Good God, gentlemen! whatever will become of you?" The profession into which you enter to-day guarantees to each and every one of you a happy, contented, and useful life. I do not know of any other of which this can be said with greater assurance. Many of you have been influenced in your choice by the example and friendship of the doctor in your family, or of some country practitioner in whom you have recognized the highest type of manhood and whose unique position in the community has filled you with a laudable ambition. You will do well to make such an one your exemplar, and I would urge you to start with no higher ambition than to join the noble band of general practitioners. They form the very sinews of the profession—generous-hearted men, with well-balanced, cool heads, not scientific always, but learned in the wisdom not of the laboratories but of the sick room. This school can take a greater pride in her graduates scattered throughout

the length and breadth of the continent than in her present splendid equipment ; they explain in great part the secret of her strength.

I was much interested the other day in reading a letter of John Locke's to the Earl of Peterborough who had consulted him about the education of his son. Locke insisted that the main point in education is to get "a relish of knowledge." "This is putting life into a pupil." Get early this relish, this clear, keen joyance in work, with which languor disappears and all shadows of annoyance flee away. But do not get too deeply absorbed to the exclusion of all outside interests. Success in life depends as much upon the man as on the physician. Mix with your fellow students, mingle with their sports and their pleasures. You may think the latter rash advice, but now-a-days even the pleasures of a medical student have become respectable, and I have no doubt that the "footing supper," which in old Côté street days was a Bacchanalian orgie, has become a love feast in which the Principal and even the Dean might participate. You are to be members of a polite as well as of a liberal profession and the more you see of life outside the narrow circle of your work the better equipped will you be for the struggle. I often wish that the citizens in our large educational centres would take a little more interest in the social life of the students, many of whom catch but few glimpses of home life during their course.

As to your method of work, I have a single bit of advice, which I give with the earnest conviction of its paramount influence in any success which may have attended my efforts in life—*Take no thought for the morrow.* Live neither in the past nor in the future, but let each day's work absorb your entire energies, and satisfy your widest ambition. That was a singular but very wise answer which Cromwell gave to Bellevire—"No one rises so high as he who knows not whither he is going," and there is much truth in it. The student who is worrying about his future, anxious over the examinations, doubting his fitness for the profession, is certain not to do so well as the man who cares for nothing but the matter in hand, and who knows not whither he is going !

While medicine is to be your vocation, or calling, see to it that you have also an avocation—some intellectual pastime which may serve to keep you in touch with the world of art, of science, or of letters. Begin at once the cultivation of some interest other than the purely professional. The difficulty is in a selection and the choice will be different according to your tastes and training. No matter what it is—but have an outside hobby. For the hard working medical student it is perhaps easiest to keep up an interest in literature. Let each subject in your year's work have a corresponding outside author. When tired of anatomy refresh your mind with Oliver Wendell Holmes ; after a worrying subject in physiology, turn to the great idealists, to Shelley or Keats for

consolation: when chemistry distresses your soul, seek peace in the great pacifier, Shakespeare: and when the complications of pharmacology are unbearable, ten minutes with Montaigne will lighten the burden. To the writings of one old physician I can urge your closest attention. There have been, and, happily, there are still in our ranks notable illustrations of the intimate relations between medicine and literature, but in the group of literary physicians Sir Thomas Browne stands preëminent. The *Religio Medici*, one of the great English classics, should be in the hands—in the hearts too—of every medical student. As I am on the confessional to-day, I may tell you that no book has had so enduring an influence on my life. I was introduced to it by my first teacher, the Rev. W. A. Johnson, Warden and Founder of the Trinity College School, and I can recall the delight with which I first read its quaint and charming pages. It was one of the strong influences which turned my thoughts towards medicine as a profession, and my most treasured copy—the second book I ever bought—has been a constant companion for thirty-one years,—comes *viâ vitæque*.* Trite but true, is the comment of Seneca—"If you are fond of books you will escape the ennui of life, you will neither sigh for evening disgusted with the occupations of the day—nor will you live dissatisfied with yourself or unprofitable to others."

And, finally, gentlemen, remember that you are here not to be made chemists or physiologists or anatomists but to learn how to recognize and treat disease, how to become practical physicians. Twenty years ago, during the summer session, I held my first class in clinical medicine at the Montreal General Hospital, and on the title page of a note book I had printed for the students I placed the following sentence, which you will find the alpha and omega of education in practical medicine.

"The knowledge which a man can use is the only real knowledge, the only knowledge which has life and growth in it and converts itself into practical power. The rest hangs like dust about the brain or dries like rain drops off the stones."

* There are two excellent editions of the *Religio Medici* available, the one in the Golden Treasury Series, MacMillan & Co., edited by the late Dr. W. A. Greenhill, the other edited by Dr. D. Lloyd Roberts, of Manchester, Smith, Elder & Co., London.

A movement is on foot to erect a memorial to Sir Thomas Browne in his native city, Norwich, subscriptions towards which will be received by Sir Peter Eade, Norwich.

TUBERCULOSIS AND INSURANCE.*

BY

J. HUNTER, M.D., of Toronto.

Probably few questions are more perplexing to the medical director of an insurance company than the presence, to a limited extent, of tuberculosis in the family history of healthy applicants; and certainly nothing can seem more unfair to the latter, or be more exasperating to the physicians who make the examinations and recommend the risks, than their rejection.

Of course, there can be no two opinions about its being the first and most imperative duty of an insurance company to safeguard most scrupulously the claims of the policy-holders, and no one need be so ungenerous as to deny to the company the exercise of such business precautions as are necessary to secure fair dividends to the stockholders. However, the granting of these privileges imposes upon it the duty of rendering a full measure of justice to the interests of the applicants.

It may also be stated in this connection, that whilst it is the duty of the physician who makes the examinations to furnish the medical director with as honest and as full and accurate reports as possible in all cases with a tuberculous history, it is just as fully the duty of the latter to assure himself that these applicants receive the full benefit of the accredited knowledge and experience of to-day. For the assuming of any merely hypothetical principle alone regarding the influence of hereditary tendency in this disease, is not sufficient to justify him in giving a decision that may be unfair to the applicant, and that may reflect very unfavorably on the professional standing, if not also upon the uprightness, of the local examiner.

Enough has been said to indicate the purport of this paper, viz., to invite a discussion that may help, in some measure at least, to define more clearly, if I may be allowed to use the somewhat expressive phrase, "where we are at," in reference to the relationship between tuberculosis and insurance.

Assuming that it is the province of an insurance company to grant the ordinary life policy to any applicant who should naturally live out the period of expectancy, to what degree then does the presence of tuberculosis in the individual or family history justify his rejection?

* Read before the Annual Meeting of the Canadian Medical Association, Toronto August 30, 1899.

The limitations of our knowledge of this disease and of our experience with its mortality in life insurance, probably warrant the rejection of the following classes:—(1) The tuberculous subject; (2) The descendants—say under thirty years of age—of a tuberculous parent, especially the maternal one; and (3) All the second-class irrespective of age who have inherited or acquired any physical defects that predispose to disease.

Eliminating these classes, we have left those over thirty years of age who, apart from the incident that one parent had tuberculosis, are physically up to the standard of first-class risks, and the members of families with healthy parentage, but of whom from 15 to 20 per cent. become tuberculous after twenty years of age.

The question of admitting applicants from either of these classes under the terms of the ordinary life policy calls for some discussion of the etiology, propogation, prophylaxis and curability of tuberculosis.

In regard to etiology, the isolation of a specific micro-organism enables us to accurately define the disease as an infectious and contagious one due to the presence of the bacillus tuberculosis. In reference to propogation we have the specific and predisposing factors. The former is directly attributable to the entrance of the bacilli into, and their destructive effects upon, the tissues. The latter, or predisposing causes, may, for the sake of brevity, be considered under the following heads:—(1) environment; (2) physical conditions either herecuntary or acquired that predispose to disease, and (3) hereditary tendencies.

Under environment may be included everything prejudicial to health, whether in climate, habits, food, sanitation, or vocation. We pass over abnormal physical conditions, since the two classes under consideration are presumed to be up to the normal standard of physical perfection, and proceed to discuss the problem of hereditary tendencies. It is true that the doctrine of the transmission of hereditary tendencies predisposing to tuberculosis has come down through the medical literature of all the centuries and has received the endorsation of the masters in every age. However, with this doctrine as with any other, neither the veneration due to its hoary age nor the influence of its associations oblige us to accept it, inasmuch as we know now how very imperfect was the knowledge on which it was founded and promulgated.

The direct transmission of the baccilli through parental channels has been shown by pathological research to be so rare, and by experimental efforts to be so difficult of accomplishment, that practically it may be set aside as being of no importance as a means of transmitting this disease. In military parlance it could be said that pathology

and experiment have dismantled the bulwarks of direct transmission and have obliged us to fall back and construct as best we can a hypothetical sand bank consisting of what is vaguely called hereditary soil, tubercular diathesis, vulnerability of tissue, etc. A glance at the reports from the recent celebrated Congress on Tuberculosis, held in Berlin, warns us that both pathological and experimental research are already causing sceptical hands to be laid on even the last tenet in our creed respecting the hereditary transmission of tuberculosis. Professor Loeffler is reported as saying that the father has no part in the transmission of the disease, and that there is neither proof of their being immunity from tuberculosis, nor of congenital or hereditary transmission of it.* Professor Hübner stated that tuberculosis was not congenital, and that infantile tuberculosis was in the great majority of cases due to an infection from parents. In 800 post-mortem examinations of infants under one year of age, tuberculosis was not found.

At a meeting of the medical directors of the leading British insurance companies held in February of this year, the speakers, whilst asserting more or less strongly their faith in the doctrine of hereditary tendency in tuberculosis, interspersed their discussions freely with such statements as the following:—"It has practically escaped notice that the strongest arguments used to support the theory of family tendency to tuberculosis tell with at least equal force that infection is the cause of the incidence and spread of tuberculosis. The close intimate circumstances of family life, the infection of the family home, and the total disregard of precautionary measures in the family life, because of ignorance, these facts, I venture to say, play a much larger part in the tragedy of family liability to tuberculosis than does hereditary tendency to that disease. But these facts have been altogether ignored in estimating the family tendency to tuberculosis in its bearing on life insurance." "Every gentleman in this room knows when a man is in a good state of health, when he is plump and sound and his pulse regular and all his internal organs are healthy, it matters little what his family history may have been." Dr. Marsh, Medical Director of the Mutual Life Assurance Co., of New York, says:—"In deciding upon the eligibility of an applicant for life insurance in whose case there is a suspicion of future danger from consumption, his personal condition is of first, and his family record of second, importance. Whenever he presents a robust physical appearance, with a weight at

* Sir Herbert Maxwell and Dr. Pye Smith, Commissioners from the Imperial Government, in their report to Parliament, state the following ; (1) Tuberculosis is caused by the bacillus tuberculosis. (2) Tuberculosis as a condition directly transmitted, is extremely rare. (3) There is little or no risk of direct infection in pulmonary tuberculosis. Professor Friederberg calls it the workingman's disease, as 50 per cent. of the mortality in their club is due to tuberculosis.

least equal to the standard or average as shown in our tables, he may be accepted notwithstanding any taint in the record of his family. In our experience such persons have a small liability to consumption, although not protected from it."

The same trend of opinion can be found in all the more recent works on the practice of medicine. The authors, although devoting some space to the problem of heredity, lay special emphasis on the infectious character of the disease.

Time will only permit a reference to one or two quotations from statistics. In the British Registrar-General's report covering the period from 1850-1880, and giving the annual average of deaths from tuberculosis in 1,000,000 people, we find a larger number of deaths from this disease during the last fifteen years of life—60 to 75—than in the first fifteen years. In other words, the grandfathers seem more susceptible to tuberculosis than their grandchildren. This, since pathology and statistics alike show that childhood possesses no immunity from tuberculosis, appears very remarkable if heredity be a strong factor in predisposing to this disease; i.e., to find in that part of the stream of life nearest the diseased fountain head less danger to the young voyager than there is in the portion left after it has been meandering on for three score years and he has turned his face, now pale and wan, towards the setting sun. Hereditary influences, owing to the innumerable changes that take place in the tissues during sixty years, must be very attenuated factors in these old people.

In an address delivered here in Toronto some few months ago, I think Dr. Bryce was reported as saying that about 80 per cent. of the deaths from tuberculosis in this city were amongst the labouring classes or those following special trades. Now, were heredity a potent factor should not the deaths be more uniformly distributed over the whole population?

I will not go any more fully into the statistics, for, doubtless, this phase of the subject will be exhaustively dealt with in the discussion that is to follow, but will proceed to notice briefly the problems of prophylaxis and curability. The infectious character of the disease is now fully established, and it naturally follows that prophylaxis consists both in avoiding sources of infection and the use of every available means of destroying the bacillus and its products. An article in the August number of the *Canadian Practitioner* shows that the act of coughing, speaking or laughing is sufficient to disseminate the germs pretty widely, hence the necessity for personal cleanliness, antiseptic sprays and inhalations, daily baths, well-ventilated rooms, wholesome food, healthy vocation, temperate habits, and outdoor life. There is another very important factor in prophylaxis which, I think, receives

altogether too little attention, viz., the control, at least to a far greater extent, of sexual indulgence. The frequency with which tuberculosis is found among those who resort to immoral practices, and the enormous increase in mortality during the most active period of sexual life in married people, are certainly sufficiently ominous to warrant us in advising these people to keep their sexual desires under the most rigid subjugation.

A line or two in reference to the curability of tuberculosis. The records of post-mortem examination show that the tuberculous process must have become quiescent in a large proportion of those who had been infected at some period during life. The statistics of cures now effected at the different sanatoria give a percentage all the way up to seventy. At a meeting recently held in Nottingham, Dr. Ransom gave a report of 1,541 cases, of which 71 per cent. were restored to work and in less than 7 per cent. did the disease advance. I think I can state that it is the personal experience of every physician in this room to have a fairly large percentage of his tuberculous cases restored to average good health. In the standing armies there has been a very gratifying decline in the mortality during recent years.

With more scientific knowledge regarding etiology, prophylaxis, and treatment, the more general co-operation of the public in preventing the spread of contagion, the easy access to and the home-like comforts of our numerous health resorts, the establishment of a sufficient number of properly constructed and well-managed sanatoria, with all these we can look forward most hopefully for a very great reduction in the mortality from tuberculosis.

In conclusion, although the purport and limitations of this paper have only permitted of the briefest possible reference to some of the phases of this very important question, yet enough has been said to show that the trend of medical opinion is now to attach so much importance to the infectious character of tuberculosis and so little to its hereditary tendencies, that a medical director would be fully justified in accepting applicants from either of these two classes under consideration as ordinary life risks.

I would like to add that I believe the time and need have fully come for the appointment of a medical commission, tribunal or court—whatever it may be called—to which a rejected applicant could appeal from the decision of a medical director.

THE TREATMENT OF ERYSIPELAS BY MARMORECK'S SERUM.*

BY

A. DE MARMORECK, M.D., of Montreal.

The programme for the present meeting being overcrowded, I have condensed what I have to say into as few words as possible.

Leaving out of question the nature of the disease which at the present day everyone is willing to admit is due to an infection of the skin by some form of streptococcus, I will say a few words on the usual method of treatment adopted. This consists in the local application of antiseptic solutions of all kinds from boracic acid to corrosive sublimate, a favorite one being ichthyol in very concentrated solutions. As the local infection is generally accompanied by a rise of temperature, it is the rule to administer quinine and generally in combination with iron or arsenic as a tonic. This treatment is rational and really effective; in some severe cases, however, it has been insufficient, and often death has occurred even in cases of erysipelas of the face.

I claim that one or two hypodermic injections of Marmoreck's anti-streptococcus serum is a far more effective form of treatment and would give in erysipelas as good results as have already been obtained by the use of the Behring-Roux antitoxin in diphtheria. I have come to this conclusion after an experience of six cases of erysipelas of the face in which I have used it. It is not necessary to report them all, but one or two will be of interest and prove, I hope, that the antitoxin has a greater curative power than a combination of the best local and general treatment.

On May 19th, 1899, I was called to see a servant girl aged 19 years, of tall and strong physique, who had been suffering from erysipelas of the face since the 14th. I found her at 8 p.m. sitting up in an arm-chair with a temperature of 105°F. and a pulse of 148. Her face was dark and bleeding in some small spots. Treatment of local applications of a 30 per cent. solution of ichthyol and a tonic containing iron, glycerine and water had been used, but without beneficial result. I immediately injected 20 cc. of Marmoreck's antitoxin, put the patient to bed and ordered her to wash her face every half hour with a solution of corrosive sublimate 1-4000. The next morning at 9 a.m. the temperature was normal and the pulse 96. Recovery was immediate.

* Read before the Canadian Medical Association, Toronto, August 31, 1899.

rupted, and five days after the first injection the patient was at work and feeling as well as ever.

Another case was that of a man who used to have two or three attacks of erysipelas every spring and fall and whom I injected twice last spring at an interval of fifteen days. Last fall he had no attack, nor has he had one this spring.

Of course, one must not as a rule draw positive conclusions from a few cases under the care of a single observer, and I do not ask you to immediately abandon the treatment to which you are accustomed and follow the method I propose. On the other hand, while there is insufficient time to discuss the subject thoroughly in all its bearing here, the report of these cases may lead to a trial of the antitoxin, and a year hence the amount of evidence at our disposal may be considerable.

With regard to the amount used, I consider it of great importance to use a most powerful antitoxin. The streptococci found in different cases of the disease may not be all of the same variety, some may be more resistant than others, and as we cannot determine the form present before giving the dose, we must use a dose powerful enough to serve for the most resistant. The Institute Pasteur of Paris has lately given us an extremely powerful antitoxin, and this is the one I have been using.

PLEURAL EMPYEMA IN CHILDREN.

BY

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Empyema of the pleural cavity is an affection clearly recognised since the dim and distant ages, the Hippocratic literature being quite liberal in its description of symptoms and quite correct in its indications for treatment, as well as in the method advised. But until the eighteenth century this condition, as existing in children, was practically overlooked and not until recent years has it been put on a scientific basis as regards etiology, diagnosis and treatment. But of late much attention has been paid to this very important branch of pediatric surgery, and upon the basis of a thorough knowledge of its pathology has come a careful and rational line of treatment. Bacteriology has aided us in this, though perhaps its influence here has not been as great as in other fields, but nevertheless, has established its constant relation to certain diseases. We are, therefore, now in a position to deal more intelligently than ever before with the etiology of this affection.

Etiology.—Three factors predominate :—(a) Pneumonia, whether primary or secondary to the exanthemata. (b) Septic processes in any part of the body. (c) Tuberculosis.

Pneumonia, or its sequence pleuropneumonia, is by far the most common cause of empyema in children. This is clearly shown by reference to the statistics of Mount Sinai Hospital, New York, where in a series of 288 cases extending over some eight years, two-thirds had a direct history of pneumonia just previous to entering the hospital. This, then, is by far the most frequent cause, and it should be the duty of every physician attending cases of bronchopneumonia in children to watch for the formation of pleural effusion, using the aspirating needle as soon as there is the slightest warrant for so doing. The existent pneumonia or bronchopneumonia, however, in most cases has also had a known origin, this being in the great majority of instances one of the exanthemata, usually measles or scarlet fever.

Of septic infection, the most common forms which produce empyema are necrotic or suppurative foci in bones, adjoining collections of pus which either break into the pleural sac or set up an adjacent inflammation, ultimately involving the pleura, or pyæmia from any one of many causes. In the latter case collections of pus in the pleural cavity are to be treated in a similar manner to those in other parts of the body.

Tuberculosis is now generally recognised as a decided and very prevalent cause, yet, strange to say, unlike tuberculous processes in other portions of the body, its presence is most often determined by an absence of bacteriological proof. Levy has laid down a rule to the effect that when no bacilli can be detected either by simple examination or after culture, that then the cause may be put down as tuberculosis. This conclusion has not been accepted by all, although certainly there is strong evidence in its favour. Inoculation of guinea-pigs will often determine the point, but the length of time required to observe the result renders it of but little practical, clinical value. Occasionally, however, the bacillus tuberculosis itself will be found, though usually fibroserous rather than purulent exudates are its home. Thus, Koplik, whose splendid work in the children's ward of Mount Sinai Hospital has brought him deserved renown, found only one case in twelve, while Netter in thirteen cases examined microscopically discovered the bacillus in five. In cases in which the fluid is sterile there is certainly a temptation to hark back to the old term idiopathic, but this would be a distinctly retrograde step. For it must not be forgotten that peptones and toxins may have destroyed their producers, this theory having many strong advocates, and although it cannot be discussed here, the fact remains that some cause has rendered bacteriological research negative. Why, then, in the absence of microscopical proof, have we a moral right to assume tuberculosis to be such an important etiological agent? Because histologically and clinically the result of the bacillus tuberculosis at work is only too plainly to be seen. Clinically, it is manifested by an absence of fœtor in the pus, by accompanying glandular enlargement, perhaps by detection of tuberculous foci in the lungs, and always by a general "scrofulous" appearance of the child. Histologically, we note an abnormal regeneration of unhealthy bone tissue after excision, and unusually proliferative granulations with a marked tendency to pus secretion. If we find these conditions constant in cases in which the tubercle bacillus can be demonstrated microscopically, and again constant in cases where the pus is sterile, we are surely justified in drawing but one conclusion.

The *predisposing causes* may be summed up as follows:—Race, climate, and habitation. As regards race, it is a curious fact that babies of the Jewish emigrants form an extremely large proportion of all cases operated on in New York. It is quite true that in Mount Sinai Hospital (which is said to have the largest empyema service in the world) Jewish children are almost entirely in evidence, but the fact remains that other hospitals, which draw their clinical material from the same quarter but differing in nationality, do not show anything like the same number of cases in proportion.

Climate is undoubtedly an important factor, the percentage of cases

in seaboard cities being much larger than in inland cities. This is probably to be accounted for by the greater prevalence of bronchopneumonia owing to the moisture of the climate.

Unhealthy surroundings, poor drainage, damp floors and walls, all tend to produce bronchopneumonia with subsequent pus formation. In many instances, however, the latter condition is due to poor medical attendance, the preceding serous pleurisy being unrecognised. Sometimes it is the fault of the parents who do not bring their children to the hospital until high temperatures have developed. We are now recognising also that many of the so-called "chronic pneumonias" are but neglected empyemas.

Diagnosis.—The diagnosis of empyema must ultimately rest upon one test—the presence of pus in the aspirating syringe—and this alone is necessary, though from a clinical and scientific standpoint it is desirable that the condition be recognised by physical diagnosis before introducing the needle.

A word or two as to the *physical signs* commonly noticed may not be out of place here, and in this connection it must be remembered that childhood alters all laws and upsets all theories. The thorax of an infant may be likened to a drum, that of an adult to a barrel, and the physical signs will vary accordingly.

Inspection.—Respiration is naturally more rapid during infancy. This frequency, however, is in proportion to the pulse—a fact to be borne in mind when seeing the little sufferer for the first time. The picture which an advanced empyema presents is not easily forgotten and has been most graphically described in the following words :—"The chest heaving so rapidly that to count the respiration is difficult, yet one side seeming to lag behind its fellow. At intervals a dyspnoeic attack and then a sharp irritating cough, all make up a scene not easily mistaken nor soon forgotten, and increasing in severity in inverse ratio to the age." But no matter how urgent the dyspnoea, one will look in vain for retraction of the abdomen just below the xyphoid cartilage. This is the distinguishing feature of dyspnoea due to a narrowing of the air passages, and is a purely mechanical phenomenon, nature endeavouring to fill the vacuum in the lungs by the chest wall. One point more may be noted. Osler mentions that not only will the intercostal space be obliterated, but the chest wall actually bulge ; this I have repeatedly observed in many varied cases.

Palpation.—Owing to the absence of a thick layer of muscle, palpation will not give in an infant the same physical signs as in an adult, especially as there is present a cavity whose naturally thin walls are stretched to the utmost, thus bringing the purulent fluid very near to the hand. In addition, the muscular power of the adult lung prevents it from contracting to the extent that the infantile lung does. *Fremitus*,

therefore, which usually is greatly diminished or absent in conditions with effusion, may be quite noticeable in these cases, so much so as at times to be misleading, and particularly is this the case in certain instances in which fremitus is increased apparently on the sound side also.

Flatness on *percussion*, next to aspiration, is the most convincing proof of the presence of pus. All writers have emphasized the wooden feeling imparted by a pus sac as against the dull, but somewhat more elastic sensation communicated to the fingers by fluid. And the very fact dwelt upon above, viz., the thinness of the chest wall, makes the elicitation of this flatness easier in children than in adults.

On *auscultation*, absolute loss of voice sound is not so constantly found as is generally supposed, for usually the child simply cries when the stethoscope is placed against the chest wall and this sound is heard all over the thorax nearly as loudly on one side as on the other. Vocal resonance is usually increased, especially in patches, and tubular breathing will often be obtained. One must not rely on the presence or absence of pectoriloquy as a diagnostic sign between serous and purulent collections unless the child has arrived at years of discretion.

Aspiration.—There are three indications for the use of this measure. (1) For the securing of temporary relief from dyspnoea. (2) To obtain pus prior to operation for bacteriological examination, with a view of determining what form of operation shall be employed. (3) To establish a diagnosis.

On the first, nothing need to said here. The second indication will be met by using an aseptic syringe. As a matter of routine, aspiration is performed in Mount Sinai Hospital once only, and that immediately before operation, the run of cases being so similar and the symptoms in the majority so well defined that percussion and inspection alone will indicate pus. In most cases, too, the history of pneumonia with subsequent aspiration by the outside medical attendant is given. In ordinary hospital work aspiration for diagnosis should be resorted to as soon as the clinical symptoms and physical signs show the absence of normal conditions. Let me emphasize the phrase "aspiration for diagnosis," because there is absolute need of a second aspiration just prior to the use of the knife. One case which has come under my notice shows this clearly.

A.B. was aspirated upon admission to hospital and about 5 cc. of pus withdrawn. The next day the little patient was prepared for operation and an incision made over the original site, but without further use of the needle. No pus was found when the pleural cavity was opened, the case being one of sacculated empyema exhausted by the first tapping.

The Indol Test.—I will not here discuss the well-established relation

between suppuration and the elimination of a greatly increased amount of indoxyl potassium sulphate, as I have already dealt with this subject at some length in a former article.* Suffice it to say that through close observations of this reaction two points in dispute among pathologists have been cleared up. First, that absorption of pus from the pleural cavity takes place to a notable degree, a fact which Solis-Cohen has denied; and secondly, that the indol reaction is increased in severity in direct proportion to the time the pus is retained; and we may here note the difference between a mammary abscess in which there is a pyogenic membrane preventing the absorption of pus and a pyothorax in which it is absent. To further illustrate this point let the amount of pus which is often found in abscesses of the breast be free in the peritoneal cavity, and the increased elimination of indol will be very quickly perceived; let it be in the pleural cavity, and the same intensity of reaction will appear only after a much longer time; let the breast be the seat of an abscess, and the reaction will not be noticeable. In brief, the absorption of pus and the production of a corresponding indicanuria depend upon the character of the enclosing surface and, if suitable for absorption, upon its extent.

Treatment.—The various methods open for use are :—(a) The expectant combined with medical treatment, which is merely mentioned to be condemned as a specimen of medievalism.

(b) Evacuation by trocar and canula,—undoubtedly the simplest and certainly one of the oldest of all methods, being practically the only one in vogue until Bowditch, of Boston, and Wyman, of Cambridge, Mass., introduced pneumatic aspiration. It was, however, at best but a makeshift, is never employed now, and may be relegated to the past with the key of Gagnon.

(c) Pneumatic aspiration. This treatment will be more often used to afford temporary relief than to effect a cure, unless occasionally in infants or in rare cases of sacculated empyemas. At times, however, when the effusion is only seropurulent it may prove sufficient without incision.

(d) Simple thoracotomy is a rapid method of operation and is very generally in vogue. A drainage tube is usually employed, but may in certain cases be dispensed with. The indications for this operation will be discussed in a subsequent paragraph.

(e) The operation of primary excision of a portion of one or even two ribs is coming more and more into general use. In Mount Sinai Hospital it is the routine one. This has been criticised unfavourably, but generally by those who are not acquainted with the conditions pre-

* Indol; its relation to prolonged suppuration and lardaceous change. The Journal of the American Medical Association, July 30, 1898.

sent. The fact remains that it, more than simple incision, is the operation *par excellence* for a service in which the cases are of long duration and where large clots of fibrin are generally present.

Choice of Operation.—This must and always will be a matter of preference, all rules to the contrary notwithstanding ; yet it is equally true that certain surroundings and conditions will materially mould an operator's methods of work. And for this reason no man can consistently advocate his own operation as the most appropriate in all cases, as the one invariably to be employed. Thus, the surgeon in charge of a pediatric clinic, who finds that primary exsection is an absolute necessity in the class of cases which come to his service, must bear in mind that this same necessity will not exist in private practice where a case can be watched from the very commencement and accurately diagnosed when as yet the fluid is only seropurulent. The following rules of procedure may be of some value as a guide :—

Exsect.—(1) In tubercular cases where secretion will probably go on for some time.

(2) In long standing cases where the pleura will be thickened.

(3) In some cases of streptococcus infection.

(4) As a routine procedure in any service or practice in which simple incision has been tried and found lacking owing to the nature of the cases.

The great advantage that primary exsection possesses is that it gives free and constant drainage, the great disadvantage is the osteomyelitis which generally follows, thus necessitating a second operation.

Make a simple pleural incision :—(1) In all cases in which it is absolutely necessary that shock, however slight, be avoided.

(2) Whenever time is the first consideration.

(3) In the empyema of healthy, well-nourished children where aspiration shows seropurulent fluid only.

The advantages of thoracotomy are these :—(a) Rapidity and simplicity. (b) No cancellous bone tissue is opened up. (c) Recovery is (probably) quicker. The disadvantage under which the operation labours is the almost necessary use of a drainage tube. If the tube be of soft material it is liable to be compressed between the unyielding ribs; if of a hard substance, it plays upon the periosteum, tending to strip it off and induce necrosis.

Retention following exsection.—As has been already said, this is the commonest and most annoying complication of the radical operation, and constitutes practically the only serious obstacle to its general adoption, as it demands further operative treatment. The following pathological process ensues in such cases.

The periosteum having been stripped back and cancellous tissue being

exposed in the cut ends of the bone, there is no hindrance to infection of the medulla, and a septic osteomyelitis is a result of the rush of foetid streptococcal pus over the ribs. The Haversian canals are blocked, the long capillaries become compressed, and a necrosis ensues. In a tuberculous child, in addition to this, granulation tissue is formed, which finally breaks down and invades the surrounding structure. Temperatures follow, often a too rapid increase of regeneration of diseased bone takes place, the outlet is diminished, retention of pus with non-expansion of lung ensues, and the necessity for a second operation becomes apparent. These indications may present themselves within a fortnight or as late as two months. If the child has been operated on in a hospital, it will usually apply for re-admittance within two months unless its stay has been very protracted. Usually, the only clinical symptoms in these cases will be a discharging sinus with temperatures of 100° to 101° F.

By enlarging the incision and introducing the little finger into the wound, one may note the following. A rough, ragged, bony projection at either end of the rib, periosteum gone, and pus oozing from the cancellous tissue. The space between the two proximal ends of the rib is diminished, so that the little finger cannot without difficulty be passed between them, and in so doing plunges through fungous granulations which have been bridging over the chasm.

Technique of operation.—Rapidity of operation, especially when an exsection is being performed, is a *sine qua non* of successful work. A certain routine should therefore be established and as far as possible carried out at every operation.

After a rapid physical examination has shown that the indications for operation are so far still clear, the site of incision, preferably over the seventh rib, is thoroughly prepared. Aspiration is then performed, and if pus is still found, a rapid incision is made over the same site. Bleeding points are secured, the muscles incised, retractors inserted, and the periosteum carefully pushed back for about one inch on either side of the median line. A long slender periosteal elevator and Sayre's "oy-ter knife" are the best instruments. When the retraction of the periosteum is completed these elevators are placed under each end of the portion of rib to be excised, which being then raised up, allows the bone forceps to be applied. Sometimes, however, the pleura has become adherent and is torn by the mere act of raising the rib, thus allowing the pus to escape before exsection has been completed. This is a very annoying accident, the pus flowing in a great stream over the operator's hands and also obscuring the field. In any case the pleural incision must be quickly completed, for from the moment of exsection until the pleural cavity is well emptied and the child again in the dorsal position, is the critical stage of the operation, and if fatal dyspnoea occur it will be at this point.

Until the incision of the pleura, the child will be best operated on lying on the sound side, but just previous to the incision of the pleura it should be brought to the edge of the table with the exposed pleura clear of the side. A large handkerchief of sterilized gauze should be at hand to be thrust into the cavity as the first rush of pus occurs. This procedure serves a double purpose, it prevents a too rapid emptying of the pleural sac and the accompanying shock which this might induce, and, besides, protects the surgeon's face from an undesirable irrigation. Koplik states that no conjunctivitis in any way approaching the severity of a gonorrhœal infection will ensue should pus reach the eye, nevertheless, the bare possibility is far from pleasant. When the flow of pus ceases the surgeon's finger should be inserted in the cavity, (1) to judge of the condition of the lung, (2) to ascertain the space available for drainage, and (3) to clear out clots of fibrin. With reference to the latter, the need of such digital exploration may be inferred when one has found a solid clot of fibrin 4 by 6 inches occupying the pleural cavity.

Should a simple thoracotomy have been the operation selected, the technique will be similar, but in the vast majority of such cases a drainage tube has to be inserted. In both instances an ordinary dry sterilised dressing is to be applied and changed as often as necessary.

After treatment is practically limited to noting retention and remedying this condition when present. If the temperature remains high and the discharge becomes scanty, be prepared to do a resection; and also if the space between the cut ends of the bone is not broad enough to freely admit one's little finger. Pus will then well up to a greater or less degree and, indeed, will be found to have burrowed superficially under the integument. The lung is contracted and covered with a thick layer of fibrin while the costal pleura is indurated, grayish, and secreting. The extent to which necrosis has advanced is variable; for the resected rib may be involved for an inch only on either side, or its entire continuity from costal border to spine. Similarly, one, two, or even four ribs may be affected to a greater or less extent. The sinus itself is lined with exuberant granulations, and these are also heaped up at its free border. Occasionally no sinus is visible, the granulations are not exuberant, and the wound to all appearance is completely and healthily closed. But there are temperatures and, at times, dyspnoea, and a probe introduced for a few inches is followed by a flow of pus. In short, we have again the symptoms of an empyema owing to retention of pus continually secreted by an unhealthy pleura. It may occasionally be found that a temperature persists even when there is no sinus and no retention. In these cases it will be due to osteomyelitis and necrosis of the ribs.

Treatment of osteomyelitis with retention.—The obliteration of a suppurating pleural cavity is the surest and quickest way of preventing further purulent discharge, and this is accomplished through three agencies:

(1) Ascent of the diaphragm. (2) Expansion of the lung. (3) Collapse of the chest wall. If nature alone cannot produce the desired result we may assist by several operative measures.

(a) Removal of the granulations by repeated curettings, the use of the rongeur and stimulation with iodoform and ether. (b) If this is insufficient, an Estlander. (c) As a last resort, Shedé's operation. Lack of space will not allow me to discuss these operative measures.

Anæsthesia.—Chloroform is generally used owing to the susceptibility of the infantile mucous membrane to the irritation of ether. It can be administered to the youngest patients capable of braving operation. The youngest I have known of was a six months old boy. The anæsthetic must be administered in minute quantities and it is well to have brandy ready in a medicine dropper in case respirations fail. The brandy is not to be swallowed, but merely acts as an irritant to the oral mucous membrane and hence as a reflex respiratory stimulant. As regards posture, the lateral is the one I prefer, the child being placed on the sound side during resection and then brought to the edge of the table with the exposed pleura downward when the incision is about to be made. At this point anæsthesia, which seldom need be brought to the point of surgical narcosis, is to be stopped.

Complications following operation.

(a) Iodoform poisoning—to avoid this wash out the gauze before using. If it develops in spite of this, use only plain sterilized gauze and stop the use of iodoform and ether as a stimulant to the granulations.

(b) Erysipelas—It usually develops from the wound coming in contact with the bed clothes from the bandage slipping, or by infection from the little patient pulling the dressings off.

(c) Pneumonia—The most common of all complications and due to the absorption of bacteria through the exposed cancellous tissue. Whether this is a fresh infection or merely the lighting up of an old one is often hard to determine.

Causes of death.—In Mount Sinai Hospital, bronchopneumonia was by far the most common, the little sufferer worn out by incessant coughing growing weaker and weaker and finally snuffing out like a candle. The London statistics show pericarditis and septicæmia to be the most frequent, but this has not been my experience.

CEREBROSPINAL MENINGITIS COMPLICATING MEASLES.*

BY

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The patient, Willie C., aged six years, who had always been strong and well, one of a family of twelve children, was attacked by a mild form of measles on May 15th. By May 18th the eruption was beginning to fade, the pulse and temperature had fallen to normal and he was feeling quite well except for a slight bronchitis and a membranous rhinitis. The next day, May 19th, at noon, I found the patient feeling somewhat dull and inclined to doze. I noticed that there was some obstruction to breathing through the nose due to a membranous exudation which blocked the left nostril, and a cleansing alkaline solution was ordered. The glands of the neck were not enlarged and the pulse and temperature remained normal. At 2.30 p.m., without the slightest warning, the child was seized with a severe convulsion. On my arrival within a few minutes I found him lying unconscious, the lips bluish, the face of a deathly, ashy grey color; a general clonic twitching, more especially of the arms and face, still persisted. The pupils were equally contracted and reacted to light; the pulse was weak and rapid; the temperature 100° F. The child was placed in a hot pack, with cold to the head, and a purgative administered.

During the afternoon there was continued moaning and great restlessness. In the evening, though the colour and pulse had improved, there was no return to consciousness but on the contrary a deepening stupor, and liquids were swallowed with some difficulty. As the bowels had not yet acted an enema was given which was very effectual. The patient rested quietly from 8.30 till midnight, when the nurse reported a second convulsion, slight in character, chiefly affecting the tongue, which was protruded in a jerky manner with much frothing at the mouth. Temperature had risen to 103° F., pulse rapid.

May 20th.—Patient was very restless after the convulsion. At 2 a.m. the temperature reached 105° F., the stupor had increased but the pupils still reacted to light and remained equally contracted. There was some rigidity of the muscles but the head was not drawn back to any extent; there was neither squint nor any other sign of paralysis. I saw the child again at 1 p.m. No urine had been voided since the previous forenoon. On passing a catheter only two and a-half ounces of urine were with-

* Read before the Montreal Medico-Chirurgical Society, June 26, 1890.

drawn. The specimen was high coloured, slightly acid, sp. gr. 1028 : no albumen, no sugar, no casts. General condition continued unaltered. On the 21st, at 2 a.m., another severe convulsion occurred, and from this on the patient passed from one fit into another until death occurred at 4 a.m., thirty-eight hours after the first convulsion. The temperature reached 109° F. before death. There was no vomiting throughout and no cutaneous eruption. The suppression of urine is also worthy of note. Dr. Alex. Hutchison kindly saw the case with me during the night of the 19th and Dr. James Stewart on the following day. Two hours before death a culture was taken from the nose. My thanks are due to Dr. Rose, of the Royal Victoria Hospital, for the examination and the following report :—

“Smears show by staining with methylene blue an intracellular diplococcus. Cultures of glycerine agar after twenty-four hours give a rather scanty growth consisting of greyish white islands over the surface of the agar. Growth on broth showed a slight turbidity. No subcultures could be obtained after six days. Microscopically the cultures showed a pure culture of a diplococcus occurring occasionally in fours and sometimes singly. The organisms varied somewhat in size, often one of the pair being larger. They also differed considerably in their manner of taking the stain, some staining more deeply than others. They stain with methylene blue, gentian violet and all the ordinary stains.

Cultures from the noses of the other two children show the same organism together with the ordinary staphylococci, etc. The organism answers in every respect to the meningococcus of Weichselbaum.”

In regard to the diagnosis of the case the following rather unusual circumstances had to be taken into consideration.

Both scarlatina and measles had been in the house for several weeks. The patient himself had not had scarlatina unless in such a mild form as to escape detection. This was quite possible, however, as several of the children had been going about and even attending school until I was called to a more marked case and discovered them desquamating. Four of the children soon developed measles. Thus the possibility of the onset of scarlatina had to be considered, but the symptoms did not support such a diagnosis. Uræmia, which was strongly suggested by the clinical features, was also excluded as a result of the urinalysis. The lungs at no time showed any signs of consolidation. Thus the diagnosis of meningitis was arrived at. As there had recently been a number of cases of cerebro-spinal meningitis in the city, this case was in all likelihood of the epidemic type. I, for my part, felt satisfied that the meningitis was infective and that in all probability the infection was

carried to the meninges from the nose, the condition of which was most peculiar and uncommon.

I have since learned that Dr. Adami some two years ago drew attention to the fact that in a case of cerebro-spinal meningitis he had found the meningococcus in both the nose and the meninges, and he pointed out that the nose was in his opinion a common source of infection in such cases.

I regret that an autopsy could not have been obtained, but the report on the cultures taken from the nares is strongly confirmatory of the above view. It is further interesting to note that two of the other children who were ill with measles at the same time also developed a like condition of the nares, namely, a membranous rhinitis, which, in spite of treatment, lasted three weeks. The membrane was abundant, thick and firm, completely plugging the nose for days and, when detached, left a bleeding surface. In addition to the membrane there was a copious mucopurulent secretion. Cultures taken ten days after the onset showed the meningococcus and the staphylococcus. So far as I have been able to learn no cases of cerebro-spinal meningitis, complicating either scarlatina or measles, have been reported.

THYROID DUCT : ITS REMOVAL.*

BY

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Persistence of any portion of the thyro-glossal duct seems to be very uncommon. There is not much literature upon the condition. The patient upon whom I operated was a boy six years of age. Nothing unusual had been noticed until about a year before I operated, when his mother found a small lump—the size of a pea—situated in the middle line of the front of the neck about 3 cm. below the hyoid bone. It gradually increased in size until it became as large as a filbert. Subsequently, the cutaneous covering became quite red and inflamed.

When I first examined the boy, this lump covered by red integument was quite conspicuous, and seemed to be irritated by the collar. The boy complained of its hurting him. Another striking peculiarity about the thing was that whenever the boy swallowed the lump was drawn upwards distinctly, and also inwards and backwards, the surrounding skin being thrown into a circular fold around the margin of this little red tumour. This had been noticed about a month, and was no doubt secondary to an adhesive inflammation between the cyst wall and the overlying skin. On palpation, a well-defined, hard cord could be felt extending from the tumour to the centre of the lower border of the hyoid bone. The tumour was soft and fluctuating.

What the nature and pathology of this most unusual condition was, I did not know. I ransacked a great many books without obtaining any light, and had about decided that I never should know what it was. I have since found it described by Bevan in Park's Surgery and in Morris' Anatomy. In the meantime, I made a small incision, and with a Volkmann's spoon scraped it out most thoroughly. The contents were not purulent, but of a thick gelatinous character and turbid, like colloid substance. Soon after this I came upon the very thing in one of the Goulstonian Lectures on the Pathology of the Thyroid Gland, delivered before the Royal College of Physicians of London by Professor G. R. Murray, and published in the *British Medical Journal*, March 11, 1899. In speaking of the development and structure of the thyroid gland, he says : "The gland is developed in the embryo in three different parts. A median diverticulum of the hypoblast which lines the pharynx of the embryo is formed between the ventral ends of the second visceral arches,

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while a lateral diverticulum is developed on each side from the posterior wall of the fourth visceral cleft. In man, the median portion persists for a time as a hollow vesicle from which a small canal, the thyro-glossal duct, leads to an opening on the dorsal surface of the tongue. At a later stage the vesicle becomes solid and the duct disappears, while its external opening on the surface of the tongue persists as the foramen cæcum in the adult." A little further on in the same lecture occurs the following :—"His has found that in some cases the thyro-glossal duct already mentioned does not become obliterated, but that it persists in the adult as the lingual duct, which has been traced from the foramen cæcum as far down as the hyoid bone. In some cases the middle lobe of the gland is continued upwards as a narrow tube, the thyroid duct, as far as the hyoid bone. [The late Professor Kanthack who examined a hundred adults for these ducts, however, found neither a lingual nor a thyroid duct in any of the cases which he investigated, and in many there was not even a foramen cæcum]."

After reading this article, I hunted up my boy, and found that the cyst had refilled and the condition was the same as before operation. At the second operation, which took place on April 17, 1899, I opened the cyst, emptied it of its contents, and found that I could pass a fine probe along the duct up to the hyoid bone. With this as a guide, I dissected out the duct as well as the cyst wall. Primary union occurred and there is no sign of recurrence. The duct measured 3 cm. in length, and was about the size of a small lead pencil.

PERSISTENCE OF THE LOWER PORTION OF THE THYRO-GLOSSAL DUCT.*

BY

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The history of the case is that of an active, healthy boy, aged eleven years, who in the summer of '84 was seized by the throat, the head being forcibly thrown backwards. No especial pain was experienced at the time, but the next morning a globular swelling the size of a marble was seen in the median line of the neck one inch below the level of the cricoid cartilage. The mass was semisolid, situated close beneath the skin, but freely separable from it. It rapidly increased in size to that of a large almond and became ovoid in shape, the longer diameter being vertical.

An incision was made into it and the contents expressed. Thereafter the sinus continually discharged a thick viscid fluid until the fall of '86, when it was freely opened, scraped, and treated with irritant injections. In five or six months it was healed, leaving a scar extending from the cricoid cartilage downwards for one and a half inches, adherent to the structures beneath and moving with deglutition.

Nothing further was noticed until the fall of '97, when, concurrent with an attack of laryngo-pharyngitis, a small hard nodule appeared over the crico-thyroid space. This disappeared in a few days, but the following spring, '98, again accompanying an attack of tonsilitis, it reappeared and increased in size to that of a large filbert nut, not tender or painful, but interfering with the wearing of a collar.

An incision was made under cocaine anæsthesia and the nodule removed. It did not shell out but required dissection especially at its upper side. Bleeding was not excessive. Healing would not take place, and the small amount of discharge was very viscid. Exploration with a probe revealed the presence of a small sinus running directly upwards in the median line just beneath the skin and ending at the upper level of the thyroid cartilage. The skin was nicked at this point and a catgut drain inserted. After the injection of tincture of iodine, carbolic, etc., for some weeks, the viscid character of the discharge ceased and closure resulted with no subsequent evidence of refilling.

That this was a case of persistence of a portion of the thyro-glossal duct there can be no doubt. The sudden and rapid filling up after traumatism may be explained by the probable re-establishment of communication between the duct and one or more alveoli of the thyroid gland as secretion from the walls of the duct alone would hardly produce the amount of fluid present. Another interesting feature is that fourteen years later there is apparent connection between inflammatory conditions of the pharynx and the reappearance of activity in the duct.

* Read before the Montreal Medico-Chirurgical Society, May 29th, 1899.

HEMIPLEGIA COMPLICATING SCARLATINA.*

BY

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The following notes are of a case which I saw but once in April, 1898, and it is through the courtesy of Dr. A. A. Lefaiivre, the attending physician, that I am enabled to place it on record.

Henry W., aged 21 months, became ill with scarlatina on March 23, 1898. On the seventh day of illness a nurse was engaged, and thereafter a detailed record of the condition was kept. From the notes and temperature it is seen that the case was a severe one, as on the first day of record (seventh of illness) the temperature was above 106° F., and ranged from 104° to 105° for the ensuing thirty hours, then running from 103° to 104° for the next seven days. The pulse averaged 150 and was irregular; respirations were from 36 to 50 per minute. Delirium and a semicomatose state were almost continually present.

The throat was covered with pseudo-membrane and there was profuse foetid discharge from the nose. Subsequently, the cervical glands were involved with œdema of the overlying skin. For this condition anti-streptococcal serum (20 cc.) was used, but with little effect. From April 3rd (11th day), the child seemed to suffer much pain in the head.

April 7th (15th day): Very restless; eyes moved from side to side; development of convergent strabismus and continuous vomiting.

April 8th: Vomiting. Towards evening the right arm became very limp, and was moved less freely than the left; right ear discharging.

April 9th: Totally unconscious, vomiting, right eye partially open. No strabismus; right arm and leg rest limp and quiet. Twitching of left side. (This twitching was described as being a subsultus.)

April 11th: Left ear discharged.

On April 12th (20th day) I saw the patient, and the condition was then as follows:—The child was lying on the back with his head drawn to the right side but rotated to the left. The eyes were closed and face passive. The right arm and leg were lying straight and flaccid, the left arm across the abdomen and the left leg flexed. Respiration was quiet and regular; pulse rapid and small; pupils equal and rather contracted, reacting to light.

When roused, the child began to whine, tossing his head from side to side and moving his left arm and leg irritably. The right arm and

* Read before the Montreal Medico-Chirurgical Society, June 26, 1899.

leg were passive and the face slightly drawn to the left. The right extremities presented some rigidity ; reflexes were increased ; tactile sensation was apparently unimpaired. The ears were discharging profusely ; no tenderness about the mastoid regions. The lungs and heart presented nothing abnormal ; the urine was abundant and reported free from albumin.

Thrombosis of the cortical branches of the left middle cerebral artery was diagnosed, for the following reasons :—

(1) The gradual and progressive onset of the paralysis, the arm being affected twenty-four hours earlier than was the leg.

(2) The very low blood pressure which had been present for a number of days.

(3) That thrombosis is the most frequent post-mortem condition found to be the cause of a hemiplegia occurring in the course of specific fevers in children.

The treatment adopted was entirely symptomatic, and from this date on there was progressive improvement in the general condition, although the nurse reported several alarming periods of collapse with thready pulse and cold extremities, which, however, were readily overcome by free stimulation and artificial heat.

On May 1st (thirty-ninth day of illness and 13th day since onset of paralysis), weak movements were noticed in the right arm and rapid improvement took place, the child standing alone on May 10th, although great wasting of the affected side had occurred.

I saw the patient in March, 1899, and he was bright and active, the nutrition of the one side being fully as good as that of the healthy side. The reflexes were equal and motor power was practically perfect, a very slight toe-drag alone remaining.

At the onset of the illness the baby was just beginning to talk, and it is interesting to note that on the recurrence of consciousness this accomplishment had not been interfered with.

Hemiplegia complicating scarlatina is not at all unknown, but reported cases are very few. Osler and Allbut, in their text-books, simply mention the occurrence of the condition without discussing it further. After a long search through the literature, I discovered in the *Monthly Cyclopædia of Medicine*,* an abstract of a paper by Alexieff which appeared in the *Journal de Médecine* (July 10, 1897), which I reproduce below :—

“The somewhat rare occurrence of various paralyses in the course of scarlet fever has been studied by Alexieff, who has been able to collect only seven or eight published cases together with two coming under his

* April, 1899, p. 141.

own observation. The first suffered from left hemiplegia about three weeks after the eruption, the face, tongue, upper and lower limbs being affected. In about twelve days a marked improvement set in, progressing to complete recovery. In the other case there was complete paralysis of the right half of the body; the paralysis was of a marked degree with loss of right nasolabial fold, complete loss of power in both upper and lower limbs on the right side, loss of knee jerk, and impaired sensation. There were no symptoms of endocarditis, but bronchopneumonia with a marked degree of albuminuria.

“On post-mortem, there was subacute parenchymatous nephritis, degeneration of cardiac muscle, thrombosis of the left middle cerebral artery, with almost complete softening of the lenticular nucleus and of the posterior portion of the internal capsule.”

RETROSPECT OF CURRENT LITERATURE.

Medicine.

UNDER THE CHARGE OF JAMES STEWART.

Apparent Idiopathic Cardiac Enlargement in Children.

DR. HAUSER. "Ueber scheinbare idiopathische Herzvergrößerung bei Kindern."—*Berliner Klin. Wochen.* No. 27, 1899.

This contribution to the study of cardiac examination shows the advantage of a careful observation of the relation of the heart to the diaphragm and when possible an inspection by means of the Röntgen rays. The writer believes that percussion of the true relative cardiac dulness in children is more difficult than in adults, thus opposing the views of most recent teachers. A correct diagnosis of the cardiac condition, whether hypertrophy, dilatation, or altered position, is important and often, if not always, in children it is impossible. By means of the Röntgen rays, Dr. Hauser claims that this difficulty can be surmounted, and the application made of this means by Professor Dr. Grunmach in cases of apparently idiopathic cardiac enlargement had shown that no cardiac enlargement existed, but that an unusually high position of the diaphragm in many cases was found to be the cause of the increased heart dulness. Such a position of the diaphragm, which changes the long axis of the heart, making it nearer the horizontal line, may be the result of stomach and bowel distention. It is possible also for increase of heart dulness to occur through an insufficiency of the functions of the lungs. In such cases the lungs are not fully expanded and hence the increased area of dulness.

Concerning the Infectious Character of and the Relation between Acute Articular Rheumatism and Chorea.

WESTPHAL: WASSERMANN AND MALKOFF. "Ueber den infectiösen Charakter und den Zusammenhang von acuten Gelenkrheumatismus und Chorea."—*Berlin. Klin. Wochen.* No. 29, 1899.

Privat Docent Wesphal in Professor Jolly's clinic in Berlin describes,

among others briefly mentioned, a case of acute articular rheumatism in a patient nineteen years of age. During the second month after the onset of the arthritis, choreiform movements began in the left arm and in a few days involved the whole of the voluntary muscles of the body. The mental functions were manifestly altered. The cardiac action was very rapid—96 to 140—the heart sounds were clear, herpes labialis developed, a severe type of delirium supervened and the patient died.

An early autopsy was performed and an early endocarditis of the mitral endothelium with parenchymatous nephritis was discovered. There was no pus formation. A careful and exact bacteriological examination of the heart's blood, the pericardial effusion, a portion of the mitral valve, the spleen, and the brain, was made by Professor Wassermann, whose report, curtailed, is here given. He succeeded in obtaining from the blood, the brain, and the mitral valve a micro-organism which, on being introduced into the blood stream of animals, induced in them high fever and arthritis of a very grave type. On opening the joints so involved, all the structures were found inflamed and in the exudate, sometimes clear and sometimes turbid, were found micro-organisms corresponding to those injected and capable of inducing similar changes in the joints of other animals into which they were in a few instances subsequently injected. In some experimental cases the swelling would subside in one joint and begin actively in another quite removed from the first.

The organism found in this case is a streptococcus belonging to that class of bacteria which for some time has been regarded as having a causal relation to acute articular rheumatism. It grows in culture media richly alkaline and best in agar made of bouillon of pigs' flesh and 2 per cent. of peptone Chapoteaut.

Aneurism of the Aorta.

H. A. HARE, M.D., and C. A. HOLDEN, M.D. "Some Facts in regard to Aneurism of the Aorta."—*Amer. Jour. of the Med. Sciences*, Oct., 1899.

An analysis of 953 cases of aneurism of the aorta was undertaken by these observers with a view of "determining certain statistical points in connection with this very interesting pathological condition." In concluding their very valuable paper they call attention to the following facts which they regard as noteworthy :—

- (1) The lesion is more frequent in males than in females.
- (2) The ascending portion of the arch is much more frequently involved than the other portions.
- (3) Aneurism of the transverse portion is of about the same frequency as that of the descending portion.

(4) In a large percentage of cases pressure from the growth and not rupture of the sac is the cause of death.

(5) Syphilis does not seem to play as large a part as an etiological factor as is usually supposed, although this is negative rather than positive evidence.

W. F. Hamilton.

Clinical Examination of the Blood.

FRANKLIN WARREN WHITE. "Cultures from the Blood in Septicæmia, Pneumonia, Meningitis and Chronic Diseases."—*Journal of Experimental Medicine*, Vol. IV., 3-4.

CHR. DE FINE LIGHT. "Clinical Researches upon the Frequency of Microbes in the Blood."—*Med. Ark.*, No. 10, 1899.

Everyone who has made efforts to obtain during life satisfactory cultivations from the blood in almost any infective disease will appreciate readily the difficulties that arise. Not only is this the case from the danger of contamination in the skin, but also from the possibilities that where so small a quantity of blood is taken one is very likely to get negative results unless the circulation be swarming with the bacteria sought. The value of obtaining more blood in cases of this kind and directly from the veins, rather than by mere puncture of the skin, has been shown from the work done in Baltimore by Flexner, Bloomer and Thayer, and others in the case of the gonococcus where successful cultivations were obtained mainly by gathering large quantities of blood for cultural purposes usually from one of the larger veins of the arm. Dr. White has made a large number of investigations in the Massachusetts General Hospital, in all 92 cases, including severe sepsis, various forms of pneumonia, cerebro-spinal meningitis and severe chronic diseases, and has obtained in this way most interesting results, and the conclusions to which he arrives have been briefly summarised as follows :—

1. Blood for bacteriological examination during life should be taken directly from the veins and in considerable quantity.

2. Resorption of toxins is the most important feature in cases of sepsis, for the pyogenic bacteria invade the general circulation in a very small proportion even in severe cases, and as a rule late in the course of the disease.

3. General infections by the pneumococcus can be demonstrated occasionally in the late stages of acute lobar pneumonia.

4. In the majority of obscure cases it is difficult to obtain cultures during life ; where the bacteria are found however the prognosis is extremely unfavorable.

Terminal infections with pyogenic cocci are sometimes the immediate

cause of death in chronic disease. Local infective processes play this part more frequently.

5. Agonal invasion of the blood is infrequent, and therefore where germs are found in the organs at autopsy immediately after death, they have been associated with the course of the disease.

Dr. Fine Licht, working along the same lines, has found likewise the importance of obtaining large quantities of blood from the veins during life in order to obtain positive results in bacteriological examinations.

In 72 patients suffering from various diseases, 31 presented bacteria; in 10 cases of typhoid bacteria were found in 7; in various lesions of the intestine for instance, as appendicitis, strangulation and so on, germs were not infrequently found, and the same in not a few instances of local suppuration.

Both series of observations are thus to be considered as most valuable to the clinician whose repeated efforts to obtain cultures by former insufficient methods have proved so often vain.

The Influence of Fatigue and Repose on the Temperature of Tuberculous Patients.

DAREMBERG ET CHUQUET. "De la Fatigue et du Repos sur la Température des Tuberculeux."—*Révue de Médecine*, Sept. 10, 1899.

The importance of slight febrile elevations in the diagnosis and prognosis of tuberculosis has long been recognised, and in the citation of a few cases of considerable interest the above authors lay still more stress upon the value of exact and frequent observations on the temperature of patients suspected of tuberculosis, even when physical signs are entirely, or almost entirely, absent. Not only is it true that the temperature will rise frequently in tuberculous patients after ordinary physical exercise, but under certain physiological influences, such, for example, as menstruation and disorders of digestion, tuberculous patients in the very early stages seem to present febrile reactions which are not regularly shown except at certain periods of the day or on certain days when repeated examinations of the temperature are made. Tuberculous patients have always been recognised to have a distinct instability of temperature, what the French are accustomed to call "Température déséquilibrée." Daremberg has already shown some years ago, and so indeed have others before him, that many phthisical patients may have after short walks, a rise of perhaps $\frac{1}{2}$ degree of temperature lasting it may be from a quarter to one hour, so too after moderate ascents, climbing stairs, etc., and for this reason he has recommended that for the two or three hours preceding the period of evening exacerbations, phthisical patients should never undertake other than the most moderate forms of exercise.

When observed carefully this instability can be made use of for the diagnosis of tuberculosis as well as for its prognosis. In cases therefore of doubt and where physical signs are absent, a certain value is to be gained by prescribing every day moderate exercise for three or four hours, after which the use of the thermometer may give valuable indications of any possible tuberculous disease present. A slight rise will occur after this exercise, the temperature falling again probably within one hour after rest has been taken. Such observations should be made not only for one or two days but for a period of ten days or more, if ~~one~~ would attain accurate results. If then every day the temperature chart shows such a condition of slight elevations after exercise and a rapid subsidence after resting, it may be considered as indicative of tuberculosis, provided of course that evidence of other disease be absent.

These observers have made a number of such investigations and have been therefore led to conclude that results of much value are to be obtained by these means. Not only is this the case after exercise such as mentioned, but with ordinary disorders of digestion they have observed repeatedly a similar febrile reaction, and still more is this marked at the regular period of menstruation.

Where in patients, on the other hand, a certain amount of disease has been found in the lungs and, with this, some fever after exercise, and if subsequently the febrile reactions have disappeared even after moderate exercise, such patients may be regarded as, at all events temporarily, healed. Notwithstanding the lucid explanation given by these authors of the value of temperature charts in early cases of tuberculosis, it would seem difficult to decide even in cases of moderate chlorosis where fever is so common, that the patients thus suffering are also the subjects of tuberculosis; and what applies here would seem to apply also in hosts of other diseases, such, for example, as the early condition of Hodgkins' disease, where the primary enlargement of the gland involves one side of the neck before perhaps any other evidence of disease is present. To decide in such cases from the elevation of temperature (which is almost certain to occur in either case), that the patients are tuberculous, would scarcely seem justified. On the other hand, no doubt where the patient would seem to be in otherwise good health and suffering in no respect from conditions other than perhaps weakness or fatigue after exercise, such careful observations as suggested would no doubt be of considerable value. It is to be regretted that the observations in many cases were not controlled by the use of tuberculin.

C. F. M.

Surgery.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

The Surgical Treatment of Hæmorrhage from Gastric Ulcers.

ANDREWS AND EISENDRATH. "The Surgical Treatment of Hæmorrhage from Gastric Ulcers."—*Annals of Surgery*, Oct. 1899.

In this very interesting paper the authors give the history of cases of hæmorrhage from gastric ulcer operated upon, and report two cases of their own, one of which was successful. In the other the hæmorrhage was controlled by a second operation for the relief of gastritis, a gastro-enterostomy being performed and union being made by a Murphy button, it resulted fatally from leakage and peritonitis.

They conclude that: (1) The results of the practice of the best modern surgery warrants the statements previously made on theoretical grounds, that early operative interference can save the lives of a part of the patients affected with bleeding ulcers of the stomach, viz., those not improved by internal medicine.

(2) Surgical intervention is to be recommended, first, in small repeated hæmorrhages; second, in severe ones occurring more than once, especially if more than 500 cc. are lost at each hæmatemesis.

(3) A single copious hæmorrhage is not necessarily an indication for operation.

(4) In ulcers at or near the pylorus, pyloroplasty (Heinecke-Mikuliez) is ideal. It makes local treatment possible, gives all of the benefits of gastro-enterostomy, and is safer.

(5) Cauterization and curetting of the ulcer should give place to resection whenever the stomach wall can be reached from without.

(6) If adherent posteriorly and at the ends of the stomach, cauterization, curettement, and ligature *en masse*, are the best substitutes for excision.

(7) Ligature *en masse* is shown by their experiments on dogs to endanger perforation when not supported by external sutures.

Pyelitis with Chronic Appendicitis.

RIESE. "Ueber Pyelitis bei Appendicitis Chronica."—*Archiv. für Klinische Chirurgie*, Band 60, Heft 1.

During the last ten years various complications have been associated with appendicitis. It is many years since abscess of the kidney was

first observed in association with inflammation of the vermiform appendix. Dr. Riese has observed in the last eighteen months, in 37 operated cases, two instances of abscess in the perirenal fat. He also reports two cases of pyelitis occurring in association with chronic appendicitis; one a lad, seventeen years of age, and the other, a fifteen years old girl.

Dr. Riese thinks that adhesions, pulling and kinking the ureters in such a way as to arrest the flow of urine and cause dilatation of the renal pelvis, may be the explanation in certain cases, and, again, that in other instances the pyelitis is due to an ascending ureteritis.

Masked Appendicitis.

EWALD. "Ueber Appendicitis Larvata."—*Archiv. für Klinische Chirurgie*, Band 60, Heft 1, 1899.

Dr. Ewald read this paper before the German Surgical Congress in Berlin, in April, 1899. He has observed patients complaining of indefinite abdominal pain and distress, in which, by exclusion, the symptoms were referred to the appendix vermiformis. These cases taken together form a somewhat typical group. The pain may be in the region of the pylorus or fundus of the stomach, or referred indefinitely to the upper abdominal region or to the navel. It is often of a dragging character, and may be felt more particularly before or after a stool. The appetite is poor and there may be dyspepsia. There may be pain and tenderness in the ileocæcal region, but not always. These patients are sometimes treated for years for chronic stomach or intestinal catarrh, and sometimes for neurasthenia or hysteria.

Dr. Ewald gives the following case reports :—

A lady, thirty years of age, complained of diffuse, abdominal pain, occurring sometimes without any known reason, at other times after meals and especially after going to stool. So severe was the pain that morphia or chloral was required. She was thin and so weak that a large portion of each day was spent in bed. An examination of the lungs, heart, stomach, and sexual organs, found nothing abnormal. The only thing found was a small mass as large as a thumb distinctly to be felt in the ileocæcal region. The cæcum seemed to be distended and filled with gas. Dr. Ewald decided that the lady must be suffering either from a chronic appendicitis or hysteria. Professor Sonnenburg was called in consultation and the appendix removed. The muscular and mucous coats were found thickened, and the canal contained bloody detritus and two concretions. There had been no recurrence of any of the symptoms five years later. Other somewhat similar cases were related.

Masked appendicitis can only be diagnosed by exclusion. Before coming to a decision all other possible conditions, such as diseases of

the gall-bladder, stomach, uterus, Fallopian tubes, ovaries, kidneys, intestines, and mesenteric glands, must be thought of, as well as chronic peritonitis. It is unquestionable that in certain cases, the removal of the appendix has been followed by relief of symptoms. I have operated on several such, which I intend to report in the near future.

The Treatment of Warts.

PURDON. "The Treatment of Warts."—*Dublin Journal of Medical Science*, August, 1899.

Dr. Purdon says that an indiarubber finger-stall, similar to a glove finger, worn night and day sufficiently to cause gentle pressure on the warts will cause them to disappear in six weeks. This is a treatment easily applied to the fingers or toes. The warts are kept constantly in a moist and macerated condition and finally disappear without leaving any mark.

Lesions of the Lateral Sinus in Injuries of the Skull.

GANGOLPHE AND PIERY. "Contribution a L'étude des Lesions du Sinus Latéral dans les Traumatismes du Crane."—*Revue de Chirurgie*, September 10th, 1899.

After discussing these injuries and reporting cases, Gangolphe and Piery arrive at the following conclusions :—

(1) The traumatic lesions of the lateral sinus are the result of a double mechanism ; a tearing by a spicule of bone or a foreign body, and a rupture due to separation of the bones at the seat of fracture.

(2) These lesions of the lateral sinus lead to a hæmorrhage, which collects and forms a clot between the dura mater and the bone. The extent of the clot depends upon the extent of separation of the dura from the bone. Frequently there co-exists an intra-arachnoid, semi-fluid collection of blood above the lesion in the wall of the sinus.

(3) The symptoms of these lesions are very variable. It is difficult to define exactly the symptoms of pressure in this region, as they sometimes resemble perfectly those of cerebral hæmorrhage.

(4) It is not only often impossible to diagnose a lesion of the lateral sinus, but even of an intracranial hæmorrhage.

(5) In the presence of these diagnostic difficulties, the surgeon should act as though assured of an intracranial hæmorrhage of traumatic origin.

(6) The proper course to pursue in the presence of a wound of the lateral sinus, certain or presumed, is as follows :—

a. If the lateral sinus is exposed the wound should be tamponed with iodoform gauze, after carefully removing all bony fragments and foreign bodies.

b. If the sinus has not been exposed by the injury, the trephine should be applied over the seat of traumatism. If the surgeon allows himself to be guided by the symptoms of cerebral localization he may trephine at a spot far removed from a blood clot.

G. E. Armstrong.

The Treatment of Hernia in Children.

JOHN LANGTON, F.R.C.S., and others. "A Discussion on the Treatment of Hernia in Children."—*British Med. Jour.*, August 19, 1899.

In opening the discussion upon the treatment of hernia in children, Mr. Langton, after referring briefly to the frequency, diagnosis and complications of the condition, drew attention to the fact that chronic intestinal irritation, leading as it does to distention of the bowels, is a frequent source of rupture inasmuch as it causes increased pressure by the abdominal muscles. Hence a suitable dietary is of essential importance as a preventive measure. Phimosis he does not consider an important causative factor, basing his opinion in part on the fact that hernia is exceedingly common amongst the Jews. The operation of circumcision and the subsequent dressings are attended with pain which the child is apt to resent. The straining of the abdominal walls under such circumstances may produce the protrusion of bowel which the operation is intended to remedy, or avoid.

Muscular exercises are an excellent preventive measure and should be tried in children with a strong family tendency to hernia.

The vast majority of cases will yield to treatment by truss if the appliance be properly adjusted and fitted. Mr. Langton does not consider that the skein of wool truss meets the indications; it is frequently found that it is impossible to keep the knot in position and that it loses rapidly in elasticity and resiliency. He much prefers a properly fitting spring truss covered with soft india rubber, to be worn day and night. The length of time necessary for the wearing of the truss to ensure a cure will vary according to the age at which the protrusion shows itself. If the hernia takes place before the age of one year the truss must be worn until the age of four years; if the truss is not worn before three or four years it must be continued until ten years; if not applied before seven years it must be worn until puberty. Patients treated by this method are cured in large numbers; the greater the delay in the application of the truss, the less the probability of success.

Mr. Langton is adverse to operative treatment in young children unless absolutely called for. The anatomical condition of the part does not lend itself to such measures. If possible, operation should be deferred until the child is five or six years of age.

Mr. Frederick Eve agreed with Mr. Langton's treatment, but would operate on all cases complicated with undescended testis. In the case of people who are not intelligent enough to carry out the truss treatment satisfactorily, he would recommend operation. Recurrence was present in only five per cent. of the cases which he had operated on in early life.

Mr. Robert Campbell was strongly of the opinion that phimosis played a considerable part in the production of hernia. He also thought well of the wool truss, which, when properly applied, was satisfactory. If after two years of treatment with a truss the patient was not cured he would advise operation.

Mr. Edmund Owen was of opinion that phimosis bears a very important part in the production of hernia. He has known on more than one occasion of hernia ceasing to descend when a tight prepuce had been removed. Hernia should be regarded as a symptom of there being something wrong and not as a pathological entity. If the surgeon looked out for and treated the cause, the radical operation was often found unnecessary. In operating on these cases he considered that undeveloped and undescended testes should be removed.

E. J. Semple.

Obstetrics.

UNDER THE CHARGE OF WILLIAM GARDNER.

The Etiology and Treatment of Eclampsia.

DAVIS, EDWARD P. "The Etiology of Eclampsia and the Diagnosis of Impending Eclampsia."—*American Gyn. and Obstet. Jour.*, July, 1899.

NORRIS, RICHARD C. "The Preventive Treatment of Puerperal Eclampsia."—*Ibid.*

Professor Davis in his paper briefly reviews the various theories which have been advanced to explain the occurrence of eclampsia. He states that at present "the bulk of evidence is distinctly in favour of the belief that a profound toxæmia originating in the bodies of mothers and fetuses causes eclampsia." As yet the exact agent has not been isolated, though the experiments of Merletti show that ammonium carbonate in solution causes eclampsia and death in animals. The lesions found post-mortem by Merletti were granular degeneration of the cell protoplasm of the liver, with alterations surrounding the central vein, granulation of the epithelium of the convoluted tubules of the kidney, and hæmorrhages in the placenta.

Winkler's study of the blood serum in eclamptics proved that the toxins of eclampsia cause convulsions, because they are absent from the urine and excretions, and present in the blood serum and in the organs of the body. Thus the urine during eclampsia is found not to be toxic because the toxins are retained in the patient's body. As it is practically impossible to experimentally examine the blood serum of patients, we must be content with the examination of the urine to diagnose impending eclampsia. The presence of serum albumin in the urine is not an indication, as it is frequently present in normal pregnancy; it is only when the amount is excessive and when it is accompanied by kidney debris that it is a serious symptom. If the urea in the urine is diminished it indicates that incomplete urea (in the form of toxins) is being retained. Davis emphasizes the importance of this point while drawing attention to the fact that the pregnant woman rarely excretes a normal amount of urea. He considers that when urea is present in the urine in quantities of less than 15 per cent., treatment should be inaugurated.

As regards the examination of the urine, he considers that the amount, the specific gravity, the percentage of urea, the presence and character

of sediment, are all points of importance. Where any or all of these are deficient, attention should be directed to the functions of the liver and intestine.

Dr. Norris points out that the only rational and efficacious treatment of eclampsia consists in prophylaxis. He considers that too much importance cannot be laid upon liver insufficiency, the common symptom of which is vomiting associated with dyspepsia and constipation. He suggests by way of prophylaxis a readily oxidized and non-constipating diet, moderate out-door exercise, frequent bathing, avoidance of compression of the waist by tight bands or corsets, and the selection of proper underwear. He agrees with Professor Davis as regards the examination of the urine and draws attention to glycosuria as a certain sign of hepatic insufficiency. He considers that it is important to establish the acute or chronic nature of the toxæmia, in that cases in which there is a sudden diminution in the waste products accompanied by the appearance of alarming constitutional symptoms, are more amenable to treatment, than are those where the toxæmia is slow in appearing and gradually increases. "When the specific gravity of the urine is low, the quantity steadily diminishing, the percentage of urea persistingly decreasing with or without the presence of albumin, the case is really alarming and indicates a chronic process which may lead to the gravest dangers."

In mild cases, he considers calomel the most satisfactory laxative, as it is a valuable intestinal antiseptic besides acting upon the liver. In these cases it is sufficient to modify the diet by eliminating the nitrogenous foods and directing an abundance of milk and water.

In grave cases where the urea is below one per cent., the specific gravity below 1010, and the quantity of the urine reduced to 800 or 1000 grams, he considers that the most active treatment is demanded. Rest in bed, an exclusive milk diet, and lavage of the large bowel daily with at least two gallons of normal salt solution, are the measures suggested. Norris considers that the hot air bath or hot packs should be reserved for cases so alarming as to require the termination of pregnancy. As a purgative in these grave cases he places the most confidence in Epsom or Rochelle salts. Instead of administering diuretics he prefers "an abundance of pure drinking water" and rectal injections of salt solution, these leading to elimination by the skin and bowels, thus saving the already over-taxed kidneys.

With regard to the termination of pregnancy, he considers that this question cannot always be decided by an examination of the urine. If the toxæmia has developed slowly and steadily and the constitutional signs and urinalysis keep pace with one another in giving evidence of the accumulation of toxins; "in spite of treatment the patient's con-

dition steadily gets worse or after showing improvement manifests at intervals sudden relapses, the only safe course is to terminate the pregnancy."

Fifty Cases of Eclampsia.

BOYER, JOSEF. "Fünfzig Fälle von Eclampsia."—*Monats. für Geb. und Gyn., July, 1899.*

In a series of 4250 births Boyer observed 50 cases of eclampsia, a proportion of one in every 85 cases. In every case albumin was present in the urine. The eclampsia occurred in 10 cases ante-partum, of which 6 died; in labour, in 29 cases, with a mortality of 6; in 11 cases post-partum, all of which recovered. Of the 56 children, 13 were born dead, 12 died on the first day, and 31 left the hospital alive.

Boyer seems to place the greatest reliance on morphia as a therapeutic agent. He claims that it prevents the onset of convulsions; its effect was most apparent in the post-partum cases, for in none of these did convulsions recur after its employment. He agrees with Veit in recommending large doses of morphia, as in ordinary doses no effect is obtained. In many of his cases he noted morphinism in the children when born, paralysis of the muscles of respiration and slow action of the heart, which were overcome by persistent efforts at artificial respiration. The effects of morphia on the children were no more marked than those produced by chloroform where surgical anaesthesia had been prolonged in order to permit of an obstetric operation to effect delivery.

Chloral administered by enema, while a valuable drug, is too uncertain in its effects on account of the frequency with which the whole or part of the enema is expelled. After a few trials it was abandoned. Diaphoresis obtained by means of hot baths followed by hot packs, Boyer considers, gives the most satisfactory results. The convulsions diminished in frequency and intensity, cyanosis disappeared, and frequently the patient regained consciousness. Labour was accelerated, as the treatment seemed to favour dilatation of the os and increase the effectiveness of the uterine contractions so that spontaneous delivery resulted, or a least an early recourse to forceps was rendered possible.

Venesection was resorted to in 7 cases, of which 4 died. The mistake of waiting until all other measures failed before employing it accounts for the number of deaths. In two cases, where early venesection was done and salt solution infused, the most brilliant results were obtained. Bleeding, Boyer believes permits the withdrawal of the toxins, and the salt solution introduced dilutes the retained toxins and blood.

Of the 39 cases where the convulsions occurred either before or during labour, 10 delivered spontaneously with only one death. In three cases

Cæsarean section was performed in the moribund state with the hope of saving the children but without success. In the remaining 26 cases operative measures were necessary to effect delivery, resulting in a mortality of 8 mothers. Thus, Boyer notes that forcible delivery distinctly increases the maternal mortality as contrasted with cases where the delivery is left to nature. On the other hand, it was apparent that emptying the uterus had a beneficial effect on the intensity and frequency of the convulsions. In 21 cases they did not recur, in 13 cases their recurrence was diminished, and in 2 cases the convulsions were not effected by delivery. Forceps were applied in 11 cases with three maternal deaths; in all three convulsions persisted after delivery. In 10 cases deep incisions of the cervix were resorted to with four deaths; eight of these were delivered by forceps and two by turning.

Unrotated Occipito-Posterior Positions.

FRY, HENRY D. "The Surgical Treatment of Unrotated Occipito-Posterior Positions."—*Amer. Jour. of Obstet.*, August, 1899.

The author first shows the influence over labour of favourable and unfavourable positions of the vertex. With regard to the operative treatment of persistent occipito-posterior cases, he prefers to avoid "undue force" in the application of the forceps by substituting other methods.

"Forcible extraction," he defines as extraction by means of forceps with the employment of prolonged and violent efforts. The blades as usually applied laterally, grasp the head obliquely and so absolutely prevent rotation. The results are a difficult operation and a dead child. In suitable cases he recommends version under anæsthesia after pushing the head up out of the pelvis, but indicates the danger of sepsis, shock, and uterine rupture in this procedure. Were forceps applied to the child's head so as to favour rotation during extraction, and version, are impossible, the choice lies between craniotomy and symphysiotomy, depending on whether the child be dead or alive. Before deciding which operation to select, the hand should be introduced into the uterus and the presence or absence of pulsations in the funis determined. Symphysiotomy he considers a safe substitute for difficult forceps cases as it offers better chances of saving the child while adding but little risk to the mother.

Interstitial Pregnancy.

SMITH, CHARLES F. "Interstitial Pregnancy, with Report of a Case."—*Med. Record, New York*, Sept. 9, 1899.

The patient was a primipara, twenty-four years of age, whose previ-

ous health had always been good. She had missed two periods when after a hard day's work she was seized with severe pains in the abdomen and faintness while walking in the street. After reaching her home she had several loose stools which gave her severe pain. The abdomen was found to be distended, tympanitic, and tender on pressure. Per vaginam, the uterus was found enlarged, the cervix soft but not dilated, and the tubes and ovaries were easily palpated. The pulse, respirations, and temperature were normal. Sedatives were administered. Early the following morning the patient gave a scream and fainted, but shortly regained consciousness. After several such attacks she was seized with violent convulsions and died before the physicians could reach her.

The abdomen on being opened was found to contain three quarts of fluid blood. In the cul-de-sac were a quantity of clots. Extensive laceration of the uterus was found just to the right of the median line and on the posterior aspect. The tubes, ovaries, and ligaments were perfectly normal, with the exception that the right tube and ovary were drawn a little higher by the development of the uterus being a little higher on that side. There was no indication of inflammation. The whole fundus showed degeneration and thickening of the wall, a portion being very soft. A ruptured amniotic sac was found containing chorionic villi and enclosed with degenerated uterine tissue which had no connection with the uterine cavity. The remaining portions of the uterine walls were firm and appeared normal. The decidua had formed in the uterine cavity and the cervix contained a mucus plug.

Sections of the uterus were found to present extensive parenchymatous and fatty degeneration. The area nearest the rupture was almost wholly fatty and gradually blended into parenchymatous, and thence into normal tissue, at some distance from the laceration.

D. J. Evans.

Canadian Medical Literature.

UNDER THE CHARGE OF KENNETH CAMERON.

[The editors will be glad to receive any reprints, monographs, etc., by Canadian writers, on medical or allied subjects (including Canadian work published in other countries) for notice in this department of the JOURNAL. Such reprints should preferably be addressed to Dr. Kenneth Cameron, 903 Dorchester street, Montreal.]

The Canadian Practitioner and Review.

August, 1899.

1. Preliminary Communication on the Spread of Tuberculosis, WILLIAM GOLDIE.
2. Notes on Treatment of Eczema, GRAHAM CHAMBERS.

September, 1899.

3. The Home Treatment and Prevention of Pulmonary Tuberculosis, T. F. McMAHON.
4. The Role of Wound Infection as a Factor in the Causation of Insanity, A. T. HOBBS.
5. Electrolysis and Cataphoresis in the Treatment of Inoperable and Recurrent Malignant Disease, R. N. FRASER.
6. Medicine in Göttingen, THOMAS McCRAE.

1. GOLDIE says that for a long time one was at a loss to explain satisfactorily why tuberculosis is not even more common than it is. With dust-infection as a main cause of its spread, it had seemed a marvel that any one could escape from the sputa-laden dust of our streets. From the investigations of Cornet, Flügge, and others, it has been shown that in the case of the guinea-pig infection takes place more readily from cough-spray than from sputa-dust. To test the correctness of these results a series of experiments were carried on in the Toronto General Hospital. Patients with clinical history of progressive chronic pulmonary tuberculosis were selected and supplied with carefully cleaned glass plates, which they held six inches from the mouth during the act of coughing. It was demonstrated that the bacilli were thrown out in the spray; for all patients in whose sputa the bacillus was found gave positive plates at *one time or another*; so constant was this that, in one, repeated negative plates led to the examination of the sputa for bacilli, with negative results, even when the centrifuge was used. Further experiments showed that during a single act of coughing a patient may throw out bacteria-laden spray, which will find access to all parts of an ordinary room. Not only is this spray thrown out while coughing, but also in the act of laughing, sneezing, talking, and deep breathing. These

latter facts are not of great interest as regards tuberculosis, for the specific bacteria rarely occurs in any number in the mouth, but they are of importance in connection with other infectious diseases, and with the otherwise unaccountable infection of operation wounds.

4. HOBBS says that we are beginning to estimate the potency of micro-organisms and their products in the frequent production, directly or indirectly, of many cases of mental alienation. The insanities following infection are : (1) Erysipelatous insanities. A study of eight cases of insanity traced to the infection of the streptococcus of Fehleisen shows that the insanity may occur during the attack of erysipelas, or may follow the subsidence of the infection. The cases were all of the maniacal type, ranging from mild, paroxysmal mania to acute violent mania, and which, in some cases, merged into a condition of chronic mania. (2) The septic insanities of the puerperium. These embrace a large field, and may for convenience be described under three heads : (a) Puerperal insanity, with little or no local lesion, caused by septic infection. The insanities from this origin occur probably from absorption into the circulation of the toxins of an infected clot, either through the placental site or some tear or abrasion, or by the absorption of the ptomaines of the saprophytic germ, which find lodgement in the detritus of a puerperal uterus. The majority of these cases, being of short duration, recover at their homes on the elimination of the poison. They are usually of a mild confusional type or a form of muttering delirium. (b) Puerperal insanities complicated by gross local lesions, the result of septic infection. The insanities of this class are usually of a more serious character than those of the former. The local inflammatory lesion acts as a focus, keeping up the prior intoxication by distributing a continued supply of the virus to the already poisoned circulation of the patient, or by reflex irritation. The majority of these patients do not recover the normal mental condition under ordinary systemic treatment. (c) Post-puerperal insanity, induced by pelvic disease, the latter being the result of septic infection.

5. FRASER relates the case of a man, aged 40, who had the right testicle removed for what proved to be cystic sarcoma. The wound healed, but two months later, a tumour was removed from the cord, which was pronounced to be a round-celled sarcoma. The disease returned, and Coley's method of injecting a mixture of streptococcus and prodigious toxins was tried, but as the tumour soon began to fungate, the treatment was stopped, and as much of the growth as possible removed. As the case seemed hopeless, the plan of treatment suggested by Dr. J. McFadden Gaston, in the *Annals of Surgery*, for August, 1897, was commenced. This consisted in the use of cataphoresis with the sponge electrodes and Donovan's solution, with the internal use of 8 minims of the

same solution, three times a day. This was persevered in, combined with the removal of portions of the diseased tissue with the knife. At the time the report was made the man was in excellent health, the cicatrices were all perfectly normal, and there was not the slightest sign of a recurrence, though almost eighteen months had elapsed. Portions of the fifth, sixth and seventh recurrences were examined and pronounced by Dr. Cullen, of Johns Hopkins Hospital, to be adeno-carcinoma.

The Canadian Journal of Medicine and Surgery.

August, 1899.

1. Restoration of the Lower Lip After Its Entire Removal for Cancer, FREDERICK WINNETT.
2. Bacteriological Work in the Laboratory, M. I. BEEMAN.

September, 1899.

3. The Present Attitude of the Medical Profession Towards Illegal Practitioners. THOMAS J. HILLIS.
4. The Plea of Insanity in Medical Jurisprudence. JAMES RUSSELL.
5. Some Opinions on "No Evidence in America of Pre-Columbian Leprosy." ALBERT ASHMEAD.

1. WINNETT describes a modification of the method of Regnier for the removal of the entire lower lip. The directions given by Regnier for estimating the width of the bridge of skin, one centimeter wider than the part removed, would often bring the cicatrix visible on the chin. The average width of the skin from the margin of the lip to the border of the chin is two inches. It is suggested that the bridge be always two inches wide in order to cover the whole chin and bring the cicatrix below it. In the second place, leaving the raw surface to granulate is most objectionable, not only on account of prolonged convalescence and leaving a scar, but also on account of ultimate contraction drawing the lip down. Grafting would likely fail owing to the discharges, and in a male would leave a bald spot. The suggested plan utilizes the loose skin of the neck, leaves no part uncovered and hastens recovery.

4. RUSSELL has long thought that a medical commission composed of men of high standing and long experience in their profession, should be appointed by the Crown to examine all prisoners charged with capital crime where the plea of insanity is set up. He is also of the opinion that when insanity is alleged, a sufficient length of time should elapse between the commission of the crime and the trial, to enable the examiners at intervals to study the nature and progress of the case and thereby reach a conclusion beyond the region of doubt. This would abolish the

too often unseemly conflict of medical evidence on opposite sides of the case, each making admissions and statements under the tortuous cross-examination of clever counsel which they never intend to make, and yet so prejudicing the case for or against the prisoner as to make the issue one of life or death. It would also abolish the tendency of medical witnesses to unduly identify themselves with the side which calls them, and perhaps unconsciously to allow prejudice to sway conviction. It would be a protection to the poor man who has neither money nor friends to engage clever counsel and able medical testimony in his behalf. It would also satisfy the public mind, which is ever sensitive in regard to the righteous punishment of crime, that justice has been done and the law vindicated. There is a growing feeling in the public mind that too many guilty criminals go unpunished by the success with which the insanity plea is urged in court. Any measure that would tend to disarm this opinion and increase public confidence in the justice and integrity of our criminal courts should command our wisest and best consideration.

The Canada Lancet.

August, 1899.

1. Some of Our Resources in the Diagnosis, Classification and Treatment of Cystitis. E. C. DUDLEY.

September, 1899.

2. Proceedings of the Canadian Medical Association.

Dominion Medical Monthly.

August, 1899.

1. Treatment of Appendicitis. T. K. HOLMES.

September, 1899.

2. Proceedings of the Canadian Medical Association.

1. HOLMES takes a conservative stand respecting operative procedure, and believes that by proper medical means, such as purgation, warm applications and rest, better results are obtained than by operating early. He operates in the interval after the urgency of the disease has abated, and in recurrent cases between the attacks. In the fulminant forms he advocates early operation in order to save life, and even then the mortality would be high. Several interesting cases are reported in detail.

The Maritime Medical News.

August, 1899.

1. The Progress of Medicine and Surgery During the Last Third of the Nineteenth Century. A. B. ATHERTON.

September, 1899.

2. Sanitary Progress. A. P. REID.
3. Floating Kidney Simulating Disease of the Genital Organs in Women. A. LAPHORN SMITH.
4. A Case of Sporadic Cretinism. W. G. PUTNAM.
5. A Case of Sporadic Cretinism. G. G. CAMPBELL.
6. Graves' Disease, with the Report of the Successful Treatment of a Case. R. COX.

Canada Medical Record.

August, 1899.

1. Excision of the Lower Half of the Rectum for Cancer. A. LAPHORN SMITH.

September, 1899.

2. Floating Kidney Simulating Disease of the Genital Organs in Women. A. LAPHORN SMITH.

La Clinique.

Août, 1899.

1. Description du Lobule Prostatique. A. GUEPIN.

Septembre, 1899.

2. Dermatoses Parasitaires. PAUL E PREVOST.

La Revue Médicale.

2 Août, 1899.

1. Les Irrigations Vaginales et les Hautes Injections Rectales en Gynécologie. M. T. BRENNAN.

9 Août, 1899.

2. Un Cas de Fièvre Typhoïde Traité par la Méthode Antiseptique de Woodbridge. A. SABOURIN.

16 Août, 1899.

3. La Caféine dans les Epanchements Séro-Fébrileux de la Cavité Pleurale. J. C. S. GAUTHIER.

20 Août, 1899.

4. L'Ecole Médicale Belge. Dr. JEHIN-PRUME.

20 Septembre, 1899.

5. Les Maladies Infectieuses. L'Examen Bacteriologique dans le Diagnostic des Maladies Infectieuses.
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Le Bulletin Medical Quebec.

1. Traitement du Placenta Prævia à Insertion Centrale. A. SIMARD, JR.
2. Quelques Rapports de Cas Personnelles Traités avec Succès par l'Electricité. CHAS. VERGE.

This is the first number of a new Journal to be published monthly, under the immediate direction of the Medical Society of Quebec and the professors of the Faculty of Medicine of Laval University.

Reviews and Notices of Books.

VACCINATION : ITS NATURAL HISTORY AND PATHOLOGY. By S. MONCKTON COPEMAN, M.A., M.D., F.R.C.P., Lond. 1899. Macmillan & Co., Ltd., London.

This volume, which is a reprint in book form of the Milroy Lectures for 1898, is a thorough and comprehensive account of the present state of our knowledge regarding vaccinia and vaccination by one who has made large personal contributions to the subject in recent years. The history of small-pox, cow-pox and vaccination are dealt with in the introductory chapter. In chapters ii. and iii. the relationship of variola and vaccinia is discussed and a history is given of the various lymph stocks. Chapters iv. and v. deal with the histology and bacteriology of the vaccine vesicle ; chapter vi. treats of variola and vaccinia in the monkey ; and chapter vii. of experiments in the production of an anti-toxin. Chapters viii. and ix. are devoted to animal vaccination and an *exposé* of the advantages of glycerinated lymph. In the appendix there is a full description of the methods adopted in the various vaccine stations for the preparation of this product. Dr. Copeman's book, in addition to being of interest to the general practitioner, will be especially useful to public vaccinators and those engaged in the manufacture of pure vaccine.

H. A. L.

PRACTICAL DIAGNOSIS. By HOBART AMORY HARE, M.D., B.Sc. Third Edition, 1898. Lea Brothers & Co., Philadelphia and New York.

The issue of a third edition of Dr. Hare's excellent work within two years of its first appearance is an indication of its practical usefulness. To those who are not already familiar with the volume, it may be explained that the scheme of the work is somewhat different from that usually followed in text-books dealing with this subject. The work is divided into two parts, the first dealing with "the manifestations of disease in organs," the second with "the manifestation of disease by symptoms." This conforms with the method of bed-side examination—the information obtained from physical examination and that obtained from a study of the patient's symptoms.

The third edition has been brought up to date and contains many new illustrations. It is a work that may be strongly recommended to students and practitioners of medicine.

H. A. L.

NURSING : ITS PRINCIPLES AND PRACTICE. By ISABEL ADAMS HAMPTON, Graduate of the New York Training School for Nurses, etc., etc. Second Edition, Revised and Enlarged. J. A. Carveth & Co., Toronto, 1899.

This excellent book, which has been brought up to date by its author

in the addition of newer features of nursing work, is probably unexcelled by any other volume on the same subject. The author's experience is the best guarantee for the value of the work,—indeed, one is apt to regard it as too detailed and thus too advanced in some respects for the junior nurse, who scarcely knows how in a three-years' course to select her reading in a complete volume of the kind. The course, as laid out by Miss Hampton for three years' training, would do honour to many medical schools,—indeed, is superior to not a few that we know of.

C. F. M.

AFFECTIONS CHIRURGICAL DU TRONC. Statistique et Observations par Le Dr. POLAILLON, Chirurgien de l'Hôtel-Dieu ; Professor agrégé de médecine à la Faculté de Paris ; Chargé de cours de Clinique annexe ; Membre de l'Académie de Médecine. Paris Libraire, Octave Doin, Editeur, 1898.

The first volume deals with surgical affections of the trunk generally, while the second volume is devoted to the consideration of surgical conditions of the ano-rectal region and diseases of the genito-urinary organs in both sexes. The volumes are exceedingly valuable as books of reference. They set forth the work, results, and methods of treatment of a man who for years has had a large field for clinical observation. It is well named "statistics and observations," and the latter, briefly yet clearly expressed, are as valuable as the former.

G. E. A.

A TREATISE ON UNRIPE CATARACT. By WM. McKEOWN, M.D., Lecturer on Ophthalmology, Queen's College, Belfast. H. K. Lewis, London. 1899.

The primary object of this treatise, as stated by the author at the beginning of chapter i., is to "contribute from personal experience to a more precise clinical knowledge of the various forms of cataract, and especially their behaviour under operation ; and to show how various forms and stages of cataract, hitherto not usually thought suitable for surgical treatment, may be successfully operated on." The work, however, is principally a plea for an earlier operation upon cases of cataract, which have not yet reached the somewhat undefined stage of "ripeness" or "maturity," and by so doing save the patients months of waiting and absence from work. Modern ophthalmologists, however, are generally much less conservative on this point, though the probability of a large amount of lens matter remaining in the anterior chamber often deters the surgeon from operating early. In order to overcome this difficulty the author recommends the introduction of a sterilized saline solution between the capsule and cortex of the lens in order to further break down the most superficial fibres and separate the capsule from the body of the lens and, after laceration of the capsule and expression of the lens, flushing of the anterior chamber with the same solution in order to remove whatever soft matter may be left behind. It may be necessary to employ only one, or both procedures, according to the nature of the cataract. To carry out these methods the author has devised a special irrigator, irrigating needles and nozzles, and he gives

in detail the points which it is necessary to observe in order to obtain the best results. This is the main feature of the work. The chapters devoted to "classification, examination of patient, preparation for operation," etc., contain nothing which is not more clearly and concisely stated in most of the modern text-books. While the volume contains some useful hints, we think the author might equally well have pointed out and presented his views in the form of a pamphlet.

F. B.

THE JOHNS HOPKINS HOSPITAL REPORTS. Volume vii. Baltimore, The Johns Hopkins Press, 1899.

This volume is devoted to the consideration of 459 cases of hernia operated on in the Johns Hopkins Hospital from June, 1889, to January, 1899, and to the special consideration of 268 cases operated on by the Halsted method, and the transplantation of the rectus muscle in certain cases of inguinal hernia in which the conjoint tendon was found obliterated. The whole has been carefully arranged by Dr. Bloodgood.

The volume is most interesting as showing the work done in the Johns Hopkins Hospital. It is worthy of note that Halsted has discontinued the excision of a portion of the vein as a routine practice. The idea was to lessen the danger of recurrence by lessening the size of the cord, and the practice was discontinued because of the marked swelling of the testicle that followed.

A very interesting history is given of the use of brass, copper, and silver wire and foil. The use of rubber gloves by both operator and assistants has lessened the number of suppurations. There is also included a description of the method employed to utilize the transplanted rectus muscle in certain cases of hernia in which the palpable portion of the conjoint tendon was found obliterated. This use of the rectus was suggested twenty-five years ago by Dr. Fuller, at that time demonstrator of anatomy in McGill University.

The 459 cases included 405 cases of inguinal, 24 cases of umbilical and ventral, and 30 cases of femoral hernia. There were 395 cases of non-strangulated hernia with two deaths, and 48 cases of strangulated hernia, in which the contents of the sac were in good condition, with 4 deaths. The cases of strangulated hernia, in which the contents of the sac consisted of gangrenous intestine or in which general peritonitis was present before operation, were 16 in number, with 15 deaths.

The cases are nearly all given in detail. The care and labour expended in following up each patient and determining his condition must have been enormous. The different steps of the different operations are most clearly and beautifully illustrated. Altogether, the volume is of great interest and a most valuable contribution to the subject of hernia and its radical cure.

CLINICAL REPORT OF THE ROTUNDA HOSPITALS. November 1st, 1896 to October 1st, 1897. By R. DANCER PUREFOY, M.D., Master. John Falconer, Dublin, 1898.

The report of the work done in this institution for the twelve months ending November 1st, 1897, forms a very interesting little volume. It

is divided into two sections, viz., one for obstetrics and one for diseases of women. During the above period 1825 patients were admitted into the obstetrical department, of whom 1386 were delivered at full time and 62 aborted. Out of these there were two deaths, one due to rupture of the uterus and one to septic endometritis. There were 4655 first visits made by patients to the out-patient dispensary connected with the department, 2007 of these being confined at their own homes, with a mortality of five, one each from pneumonia, placenta prævia, inversion uteri, pulmonary embolism and cardiac disease. The cases treated at both the indoor and outdoor departments are conveniently tabulated.

The gynæcological report begins with a short history of this department and a description of the operating room, wards, etc., follows. The leading features about the operating theatres is that in one of them the part where the actual operative work is done is separated from the students' benches by a glass screen, thus preventing all danger of contamination from the spectators.

The patients admitted to the gynæcological wards (of which there are five) numbered 528, of these 468 received treatment. Nine deaths occurred subsequent to the following operations, viz., four after pan-hysterectomies (eleven in number, two vaginal for cancer, nine abdominal for uterine tumours), one after ovariectomy, one after double salpingo-oöphorectomy, one after exploratory laparotomy in a case of acute general peritonitis, one after opening an abscess of the abdominal wall, and one after curetting and injecting iodine for endometritis.

In addition to the tables of diseases and operations, short histories of the more interesting cases are related, the rarest case reported being one of a pus tube with the pedicle twisted three times. A few excellent and interesting cuts and plates are scattered throughout the work.

F. A. L. L.

AMERICAN POCKET MEDICAL DICTIONARY. Edited by W. A. NEWMAN DORLAND, A.M., M.D., Assistant Obstetrician to the Hospital of the University of Philadelphia, Fellow of the American Academy of Medicine, etc., containing the pronunciation and definition of over 26,000 of the terms used in medicine and the kindred sciences, along with over 60 extensive tables. Second Edition, Revised. Philadelphia, W. B. Saunders, 1899.

That a second edition has been necessary within six months is the best evidence of the value of this little work, which we reviewed in November, 1898. The preface states that the only changes are the introduction of a few new words and the correction of some typographical errors. The book is bound in limp leather with gilt edges.

HISTOLOGY, NORMAL AND MORBID. By EDWARD R. DUNHAM, Ph.B., M.D. New York & Philadelphia, Lea Bros. & Co., 1898.

We are in not a little difficulty to know how to review this work, for, so far as it goes, it is sharp and precise and excellent both in the way in which it is written and in the general appearance of the work. Our difficulty lies in recommending the use of the same. Where normal and morbid histology are taught by the same individual and in direct asso-

ciation the course given is admirable, but to this class alone is the work to be recommended. Where the two courses are taught, as is most usual, by separate teachers, then the amount of morbid histology at least is insufficient for general purposes. The work, in short, bears evidence of having been primarily prepared in connection with Dr. Dunham's own classes, and those classes are to be congratulated upon the thorough system of teaching that this little manual indicates.

J. G. A.

A MANUAL OF SURGICAL TREATMENT. By W. WATSON CHEYNE, M.B., F.R.C.S., F.R.S., Professor of Surgery in King's College, London ; Surgeon to King's College Hospital, and to the Children's Hospital, Paddington Green, etc. ; and F. F. BURGHARD, M.D. and M.S., Lond., F.R.C.S., Teacher of Practical Surgery in King's College, London ; Surgeon to King's College Hospital and the Children's Hospital, Paddington Green, etc. In six volumes. Vol. I. The Treatment of General Surgical Diseases, including Inflammation, Suppuration, Ulceration, Gangrene, Wounds and their Complications, Infective Diseases and Tumours, The Administration of Anæsthetics, by Dr. Silk. Lea Brothers & Co. Philadelphia and New York, 1899.

The names of the authors should be a sufficient guarantee of the scientific value and practical character of these volumes. The size of the book is a convenient one, the first volume containing about 275 pages. The type is clear, the illustrations are numerous, distinct, and helpful to the reader. The work will probably be deservedly popular.

Treatment is really the end and aim of surgery, and here is a work devoted to the care, hygienics, dietetics, and treatment of patients suffering from pathological conditions known as surgical. Mr. Watson Cheyne is eminently qualified to speak on his chosen subject with authority.

In the first volume, inflammation, ulceration, and gangrene receive attention, and the pathology and treatment are made clear and interesting. The same may be said of the chapters on burns, tetanus, and erysipelas. The article on anæsthetics by Dr. Silk is broad and full.

One criticism might be made, possibly, on the frequency with which strong solutions of carbolic acid are recommended for application to the cutaneous surface. It is just possible that the continuous application of a 1 to 20 solution of carbolic acid to the skin continued for some hours might in some patients be followed by undesirable and unpleasant after effects.

Again, in the treatment, one might expect some statement regarding the efficacy and advisability of using intra-muscular injections of mercury itself in emulsion, as recommended by some army medical officers. Also, on the subject of tetanus, if one is to be guided by some cases recently reported, the quantity of antitetanic serum advised is indefinite and, so far as indicated, too small in amount. Neither is any mention made of intracerebral instillation of the serum as recently practised, and apparently with benefit, at Netley.

The volume as a whole, however, is a most clear and lucid exposition of the recognised methods of treating the subjects discussed.

G. E. A.

THE MINERAL WATERS OF THE UNITED STATES AND THEIR THERAPEUTIC USES. By JAMES K. CROOK, A.M., M.D., Adjunct Professor of Clinical Medicine and Physical Diagnosis at the New York Post-Graduate Medical School, etc. New York and Philadelphia, Lea Brothers & Co., 1899.

This work is divided into two parts. The first, in ten chapters, discusses the general subject of mineral waters and their therapeutic uses. The second part deals with the mineral springs and wells of the United States and with the topographical and climatic features of each State and Territory. An appendix on Potable Waters occupies about nine pages.

The need of such a work as this so ably prepared by Dr. Crook, has been long felt, while its value must be greatly appreciated by all interested in this subject and especially by the physician who has patients in need of a sojourn at some spa or health resort. Dr. Crook has drawn from every available source. In addition to personal observations he has laid those of others under tribute to this work and each source has been freely acknowledged.

That which makes this work especially valuable is the report upon the chemical analysis of the waters of all the important springs and the climate of the localities. "More than two hundred mineral spring localities are for the first time described in a book of this kind."

The work is contained in a neat octavo volume of 588 pages and is a very important addition to the literature on mineral waters and climatology.

W. F. H.

THE HYGIENE OF THE MOUTH: A Guide to the Prevention and Control of Dental Diseases. By R. DENISON PEDLEY, F.R.C.S. Ed., L.D.S. Eng. Dental Surgeon to the Evelina Hospital for Sick Children, Southwark, London. With numerous illustrations. London, J. P. Segg & Co.; Philadelphia, S. S. White Dental Mfg. Co., 1899.

This is a small octavo volume of about 100 pages and fills a long-felt want both as regards the medical profession and the laity. Too little attention has always been paid to the care of children's teeth, especially the milk teeth. Even at the present day one is often, when questioning a mother who takes every care of her children in all other respects, as to why she neglects the cleansing of their teeth, confronted with the answer that the family dentist considers that decay of the first teeth is necessary to aid in the eruption of the second.

The book is divided into two parts, the first relating to the hygiene of the mouth in children, the second in adults. The author points out very forcibly that dental caries always begin on the outside and that it is to micro-organisms that the direct destruction of the teeth is due. The collection of debris from the food and the want of proper cleansing furnish the two conditions necessary for the growth of these organisms. The idea that sugar is deleterious is not entirely borne out by the facts, the children of the lowest classes of hospital patients showing a greater proportionate amount of caries than their more well-to-do, and presumably better fed brothers and sisters, the latter undoubtedly getting more

"sweets." In the author's opinion, starchy foods are much more likely to produce acid fermentation than sugar, on account of the great solubility of the latter and the probability of its soon being washed away by the saliva. The habit of giving children none but soft and easily masticated food is considered a factor, the friction resulting from masticating hard food serving very materially in keeping the teeth clean. The connection between dental caries and some of the nervous disorders of childhood, notably chorea, is clearly shown. One great point made is that "a habit of cleanliness early impressed is seldom lost throughout life, and a child will be as uncomfortable later on in life when his teeth remain uncleansed as when he is unwashed."

Of the chapter on care of the teeth in adults nothing need be said but that the subject is presented in a way that makes intelligible the causes and course of the disease and illustrates by many examples the relationship so often found between indigestion, neuralgia, etc., and dental caries.

G. G. C.

ANNUAL REPORT OF THE SUPERVISING SURGEON-GENERAL OF THE
MARINE HOSPITAL SERVICE OF THE UNITED STATES FOR 1898.
Washington, 1899.

The amount of material in this report, published under the direction of Surgeon-General Walter Wyman, is remarkable and so varied that one cannot help a feeling of pity with this as with so many other official publications, that so much valuable material is practically buried, cheek-by-jowl. With the financial statements, and circulars calling for shelters for deck corps on Western rivers, etc., are valuable articles on the radical cure of hernia, upon tuberculosis, notes upon tuberculosis in Rio and a long series of articles upon yellow fever, its diagnosis, treatment and prophylaxis and the quarantine regulations relating thereto. So also the Annual contains tables showing the geographical distribution of cholera during the year, reports bearing upon the annual history of small-pox in the United States, the Plague in India and other countries, Leprosy in Japan and Denmark, tables of yearly mortality in the cities of the United States with regulations regarding the transportation of dead bodies in the States and finally, a series of valuable reports from the hygienic laboratory upon the infections caused by the pneumococcus, studies of the pseudo-diphtheria bacillus, bacteriological examination of the Potomac water supply and lastly, a report on the best method of disinfecting mail matter—altogether 828 large octavo pages of closely printed matter.

The variety of the contents—and we have but indicated some of the leading articles—is extraordinary, and with reference to many of them the question comes forward, how do these subjects come into the purview of the Marine Hospital Service of the United States? The only answer to this question is that the Marine Hospital Service is much more than its name implies, and that in the absence of any Government Department of Public Health, the official public health work and hygienic investigations of the Federal Government of the United States, are conducted largely by the Marine Hospital Service. We cannot but think

that the time is ripe for giving to this department its proper designation, even if this be at the risk of adding another member to the Cabinet. Yet, recognising that the public health service is so important, it should be placed upon a more direct footing than it at present holds.

As indicated by the title page of the report before us, the Marine Hospital Service has been in operation for just 100 years. During that time it has steadily increased in efficiency and in utility, not merely for the benefit of the Navy but for the benefit of the country at large, and that in so many directions, that it is fitting that its evolution into a great public health service of the nation, should be aided and acknowledged.

In looking through the Report, one or two errors have caught our eye : thus, the time has surely come when no official publication should give the record of a case of "Typho-Malarial Fever," this is given on page 92. While again we ask whether it is not abuse of the term "Secondary Syphilis" to employ this for an eruption with ulceration on the wrists and neck, occurring 25 years after the primary chancre, on page 208.

TRANSACTIONS OF THE AMERICAN DERMATOLOGICAL ASSOCIATION at its Twenty-Second Annual Meeting held in Princeton, New Jersey, May 31 and June 1, and in New York City, June 2, 1898. Official Report of the Proceedings by JOHN T. BOWEN, M.D., Secretary. Concord, N.H., The Rumford Press, 1899.

The contents of this volume of Transactions include the President's address and fifteen papers. The President, Dr. J. Nevins Hyde, in the annual address reviewed the results of the year's work. Among the papers are the following : "Hydroa Vacciniiforme," by Dr. James C. White ; "An Unusual Bullous Eruption limited to certain areas and recurring at irregular intervals," by Dr. W. T. Corlett ; "Are Malignant Growths arising from Moles of a Carcinomatous or Sarcomatous Nature?" by T. C. Gilchrist, the conclusions arrived at being that any malignant growth springing from the ephtheloid cells which make up the mole should be regarded as carcinoma and not sarcoma ; "A Contribution to the study of Premycotic State of Mycosis Fungoides," Drs. J. N. Hyde and F. H. Montgomery, who concluded that the term was not well chosen, the skin eruptions in the early period of mycosis being as significant expressions of the general disease as the tumours themselves. Dr. F. J. Shepherd presented the report of a case of "Granuloma of the Face and Extremities," concerning the nature of which he had great difficulty in coming to a conclusion and asked the opinion of the association. A discussion on "Lupus Erythematosus," introduced by Dr. A. R. Robinson and Dr. J. C. White ; a report of "Three cases of Urticaria Pigmentosa," by Dr. H. W. Stelwagon ; "Papular, Persistent Dermatitis," a report on an undescribed disease, by Dr. J. C. Johnston ; and "Lichen Scrofulosum in a Negro," by Dr. T. C. Gilchrist, complete the volume.

The volume is illustrated with a large number of photographic half-tones and contains as usual, at the end, the table of the combined returns of the association for the year 1897, and also of the preceding twenty years.

Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Stated Meeting, April 15th, 1899.

DR. J. G. ADAMI, PRESIDENT, IN THE CHAIR.

Thrombosis of the Middle Cerebral Artery.

THE PRESIDENT exhibited specimens of the case and related the clinical history.

DR. F. J. SHEPHERD referred to two cases of his own, one of which was the first case he had ever reported before this society—in 1876. There was loss of speech and right-sided paralysis, both of which were entirely recovered from, but the power of writing was never regained.

Atrophy of the Gall-Bladder from Calculus.

DR. D. P. ANDERSON exhibited the specimens from this case and DR. SHEPHERD related the clinical history.

THE PRESIDENT had seen two if not three cases of atrophy of the gall-bladder associated with stone. In one case there were two stones in a separate cavity.

Tubercular Cystitis in a Child.

DR. A. E. GARROW reported this case.

Rupture of the Superior Mesenteric Artery.

DR. F. J. SHEPHERD reported this case. (See p. 513 of the July number.)

Aortic Disease with Anomalous Signs.

DR. W. F. HAMILTON read the report of this case. (See page 508 of the July number.)

Tumour of the Pons Cerebri.

DR. JAMES STEWART read the report of the case and DR. D. A. SHIRRES described the pathological condition in the brain.

Stated Meeting, May 29th, 1899.

J. G. ADAMI, PRESIDENT, IN THE CHAIR.

Absence of the Outer Third of the Clavicle.

DR. W. F. HAMILTON presented a woman in whom the outer third of each clavicle was replaced by a fibrous band, and discussed the causation of this rare condition.

DR. F. G. FINLEY was inclined to exclude rickets as a possible cause on account of the fact that the clavicle was fully ossified at birth. He

thought the condition must be due to some cause acting during intra-uterine life.

DR. D. J. EVANS agreed with Dr. Finley as regarding the cause. Rickets was a disease developing usually between the second and seventh years. He referred to a case seen by himself in which there was noticed on the day after an easy birth a well-defined callus in the central portion of each clavicle.

Autoscopy of the Air Passages.

DR. H. D. HAMILTON demonstrated the use of the method of direct examination of the larynx by means of the instrument devised for this purpose.

Diagnostic and Clinical Apparatus in Gastro-Intestinal Disease.

DR. C. F. MARTIN exhibited some of the more recent improvements in the apparatus used in connection with the diagnosis and treatment of gastro-intestinal disease. They consisted in various forms of rectal and stomach tubes and the gastro-diaphane.

The Surgical Treatment of Hæmatemesie.

DR. G. E. ARMSTRONG read a paper with the above title, which will be published in the December number.

DR. JAMES STEWART stated that it was rare in his experience to see a patient die directly from the hæmorrhage of a gastric ulcer. Repeated hæmorrhages are the ones which usually cause death in the end. He did not think that a single large hæmorrhage should call for surgical interference.

THE PRESIDENT thought that before deciding on operation it was most necessary to decide upon the nature of the lesion causing the hæmorrhage. Where an œsophageal varix was the cause of the bleeding, operation could do nothing to relieve the condition, as it would be impossible to deal with the large mass of veins there present. Again, in a case of duodenal ulcer, he should judge that the smallness of the lumen of the parts would render operation very difficult.

Cyst of the Epiglottis.

DR. H. D. HAMILTON read the report of this case. (See page 602 of the August number.)

Persistent Thyroglossal Duct.

DR. G. E. ARMSTRONG gave the clinical notes and exhibited the specimen of a case of this rare condition. (See page 853.)

DR. A. T. BAZIN related a case of somewhat similar character, the lower portion of the duct having persisted. (See page 855.)

Resolutions re Prevention of Tuberculosis.

The following resolutions drawn up by the committee appointed for

that purpose at the conclusion of the discussion on tuberculosis were adopted unanimously.

That whereas tuberculosis is exceedingly prevalent in the Province of Quebec and contributes largely to the mortality rate ; and whereas it is fully recognised that pulmonary tuberculosis is a communicable and infectious disease ; and whereas a room or house which is, or has been, occupied by a person suffering from pulmonary tuberculosis must be considered a source of infection to healthy persons thereafter occupying such compartment ; and whereas the expectoration of tuberculous sputum in conveyances and public places is another great source of infection ; and whereas the successful treatment and comparative eradication of the disease can only be carried out in institutions adapted to this end :

Be it resolved : that the Montreal Medico-Chirurgical Society hereby recommends to the Board of Health of the Province of Quebec the enactment of such laws by the Provincial Legislature as shall ensure the diminution of tuberculosis ; and, recognising the good work already performed by that Board, urge the President and members of the same to take such steps as will ensure the passage of these laws so framed as to bring about the following measures for the public good :—

(1) The compulsory notification to local boards of health in the cities and towns of this province of all cases of pulmonary tuberculosis occurring within the limits of these cities and towns by the physician attending such cases, to the intent that specially infected areas may be detected and means taken to arrest the spread of the disease.

(2) The disinfection of domiciles by the Municipal authorities following upon the occurrence of death from tuberculosis in those domiciles, or of removal of a tuberculous patient from the same.

(3) The posting of notices in railway and street cars, on steamboats, in public markets and municipal buildings, courts of justice, and public waiting rooms—forbidding spitting.

(4) The ready conviction and punishment by fixed penalty of offenders found spitting in public places contrary to above.

(5) The establishment of Provincial Sanatoria for the treatment of tuberculous patients who are unable to pay for such treatment.

The following resolution was also passed :—

That whereas the connection between tuberculosis in the human being and tuberculosis in cattle and other lower animals has been definitely established ; and whereas the well-being of the cattle of the Dominion is a matter of national import, and the existence of tuberculosis among these cattle a cause of very serious loss to the farmers ; and whereas, by the employment of tuberculin, it is possible to detect with great certainty the existence of this disease in individual cattle ; and whereas, further,

the observations of the Veterinary Inspectors of this Dominion would seem clearly to have proved that, relatively to other countries, this Dominion is in a most favourable position, in that the proportion of diseased to healthy cattle is apparently less than has been found in any large extent of territory in the Old or in the New World ; and whereas, further, it is not anticipated that the cost to the Government for compensation will be excessive and it will be to the credit of the Dominion and to the great augmentation of the value of our cattle if this disease can be practically eradicated from the Dominion ;

Your petitioners, the President, Council, and Members of the Montreal Medico-Chirurgical Society, respectfully recommend that the Government of the Dominion take such steps as will lead to the eradication of bovine tuberculosis, by means of the systematic inspection of the cattle throughout the Dominion and by compensation, where found necessary, and by prohibition of the removal of such cattle as react to the tuberculin test.

Resolved, further, that the above resolution be transmitted to T. G. Roddick, Esq., M.D., Member of Parliament for the St. Antoine division of this city, begging him to take such steps as are proper to present the above resolution to the Government of the Dominion.

Stated Meeting, June 12th, 1899.

DR. J. M. ELDER, FIRST VICE-PRESIDENT, IN THE CHAIR.

Discussion on Goitre.

The discussion was introduced by a paper by Dr. J. A. Springle on "The Etiology and Incidence in the district of Montreal." Dr. F. J. Shepherd followed with the "Symptoms and Surgical Treatment," and the President "The Varieties and Pathology." (These papers will be published in the December number of this Journal.)

Stated Meeting, June 26th, 1899.

DR. J. G. ADAMI, PRESIDENT, IN THE CHAIR.

Excision of Cancer of the Rectum.

DR. A. LAPHORN SMITH read the report of this case.

DR. A. E. GARROW reported a similar case and presented the patient.

Tubercular Disease of the Wrist.

DR. J. A. HUTCHISON presented a patient who had been treated for this disease.

Basal Fracture of the Skull.

DR. J. M. ELDER presented two patients and gave the histories of two others with basal fractures of the skull, a report of which is included in the paper on this subject in the October number of this Journal.

Cerebrospinal Meningitis Complicating Measles.

DR. F. R. ENGLAND read the report of this case. (See page 850.)

Hemiplegia Complicating Scarlatina.

DR. A. T. BAZIN reported the case. (See page 856.)

ANNUAL MEETING.

The Twenty-Ninth Annual Meeting of the Montreal Medico-Chirurgical Society was held in the Drummond Hall on Friday evening, Oct. 6th, 1899.

The retiring President, J. G. ADAMI, M.D., occupied the chair.

The minutes of the last annual meeting were read and confirmed.

In the absence, through illness, of the Treasurer, DR. J. M. JACK, the Secretary read the financial statement for the year, which had been duly audited by the Council.

The receipts for the year were \$674.45, and expenditure \$408.08, leaving a balance on hand of \$190.37, which will be largely increased by the reimbursement of funds now held by the election committee of the society. The total assets are \$905.00 and liabilities nil.

The Secretary, DR. A. T. BAZIN, reported that 18 regular meetings had been held during the year, with an average attendance of 42 members, the largest numbering 72 regular members and 18 visitors. Twenty-two new members, including four ladies, joined during the year, making the total membership now 162, which, with 27 temporary members, made the grand total 189. Routine work consisted of 95 items, viz., discussions, 5 ; papers, 12 ; case reports, 31 ; living cases, 9 ; pathological specimens, 33 ; demonstrations, 5.

Work of a more or less public nature was also entered upon, especially in reference to the formation of a Central Hospital Board, the enactment of legislation in the Dominion Parliament recognizing the British Pharmacopœia as the Official Canadian Pharmacopœia, representation to the Dominion and Provincial Governments of the necessity of regulations to prevent the frequency of tuberculosis and the creation of a committee to formulate a Canadian Addendum to the British Pharmacopœia.

The following were elected officers for 1899-1900 :—

President—J. G. Adami, M.D., re-elected.

First Vice-President—F. R. England, M.D.

Second Vice-President—George Villeneuve, M.D.

Treasurer—J. M. Jack, M.D., re-elected.

Secretary—A. T. Bazin, M.D., re-elected.

Librarian—F. A. L. Lockhart, M.B., re-elected.

Council—F. J. Shepherd, M.D., re-elected, Jas. Perrigo, M.D., and James Stewart, M.D.

The newly-elected Vice-President having taken the chair, the retiring PRESIDENT, Dr. J. G. Adams, delivered the following address.

President's Address.

In reviewing the work accomplished by our Society during the past year, it is impossible to restrain a laudatory tone and, as speaking on behalf of the Society, one of definite self-appreciation. Just as the cloud has its silver lining and untoward events some compensatory benefit, so now the very irregularity of my presence in the chair in which you did me the great honour of installing me a year ago, permits me to give vent to the fullest expressions of congratulation upon the good deeds of the Society while at the same time not seeming "to pat myself upon the back," if I may employ this homely term. How much I would have given to prevent my frequent absence from your meetings, I cannot say; the matter is so immediately personal that I cannot dwell upon it. This, however, I may venture, that in the rapid advances made by the Society during the past twelve months we have but another demonstration of how largely the welfare of a body like ours depends upon its secretary. An active secretary, keenly interested in the work of his society or corporation, ready to spend no small amount of time in hunting up those willing and capable to make communications, and having a ready recognition of what will make the meetings attractive, is the greatest factor in making the meetings thoroughly live and successful and in ensuring good attendance. Such a secretary I am glad to say we have found in Dr. Bazin, and departing from precedent, I am glad, first of all, to call attention to the rôle played by him in bringing about the good results of last session's work. Nor again, though I am in this matter, of necessity, only speak from hearsay, can I neglect to express our appreciation of the active services of the 1st and 2nd vice-presidents. For once these positions have not been sinecures, and much is owing to Dr. Lafleur and Dr. Elder for their superintendence over the meetings of the society on very many occasions. Unfortunately, through illness our treasurer, Dr. Jack, is absent to-night and cannot receive in person the token of our recognition of the large amount of time he has freely given to the somewhat thankless and uninteresting task of caring for our finances. Through his watchful care of our interests, the financial position of the Society is much better than it has been for very many years, and following the present policy, which he has been largely instrumental in developing, we are now on the high road towards possessing such a balance at the banker's that we may look forward without anxiety to soon acquiring a permanent meeting-place of our own.

The Secretary's report has brought forward clearly and concisely the

main events characterising the history of the society during the past session, but this report, dealing as it does with the work of the society in a statistical manner, does not call attention to the individual contributions of members and does but refer in passing to what has been a very marked feature, namely, the part played by the society in connection with matters of public and professional interest.

It is impossible to enumerate all the communications brought before the society; nevertheless, much material of no small value has been presented, and in reviewing the session I cannot but bring to mind some of the leading communications. In so doing it must be recognised that this is, of necessity, largely a matter of personal appreciation, and that very possibly I may leave out sundry items which to the majority of the members are of more immediate interest than those here mentioned. As a pathologist, naturally I am inclined to attach more importance to the demonstration of more unusual cases of disease and to observations throwing additional light on causation and symptomatology.

Among the living cases brought forward may be mentioned as being of especial interest, Dr. Armstrong's demonstration of a case of Charcot's joint disease, a condition which appears to be curiously rare on this continent, as again Dr. W. F. Hamilton's remarkable case of congenital absence of the clavicles. Among the pathological material is Dr. Anderson's unusual case of cephalhæmatoma with bony development, Dr. Wyatt Johnston's demonstration of a characteristic biological test for the presence of arsenic in tissues by means of growth of a special form of *Penicillium* (*P. brevicaulis*). Among the case reports, several are of more than usual interest—Dr. Birket's case of the presence for long years of a foreign body (thimble) in the nasal passages, Dr. Laphorn Smith's case of operative treatment for the relief of urinary incontinence in the female, a report by Drs. Finley and Wyatt Johnston on a case of double proptosis due to thrombosis of the cavernous sinuses, Dr. Lafleur's clear description of the value of lumbar puncture in cases of tuberculous meningitis with notes of a case in which the tubercle bacilli were found, a case by Dr. Stewart and Dr. Shirres of tumour in the pons, throwing light upon the localisation of the centres for the 4th nerve, Dr. Bazin's study of hemiplegia following scarlet fever, and the instructive series of cases of fracture of the base of the skull by Dr. Elder, together with Dr. Bell's case of huge Suboccipital teratoma.

Passing now to the papers, not a few of these were of more than ordinary interest, more especially I would mention that by Dr. Hamilton upon pneumothorax, in which he drew particular attention to the possibility of this condition occurring in the absence of communication between the pleural cavity and either the lungs or the abdominal

cavity, and that by Dr. Maude E. Abbott upon functional heart murmurs, a paper noticeable as being the first contributed to the society by one of the lady members, and more especially by the careful study of hospital reports of which it was the outcome. Dr. Archibald's paper upon hemorrhoids in children, a record of a condition very rarely met with, was characterised by evidence of very considerable research into the scattered references to instances of this condition from the beginning of the century onwards. Another paper, also the result of very extensive study of material, and of much original research, a paper not a little remarkable in many respects, one, indeed, which, if the views enunciated be found correct, will become classical, was that by Dr. A. G. Nicholls upon the etiology of chronic Bright's disease, while Dr. Girdwood's paper upon Stereo-Skiagraphy calls attention to a method of skiagraphic observation giving a remarkably sure localisation of foreign bodies in the tissues, a method which Dr. Girdwood had worked out independently of other observers, and which since the publication of this paper has become increasingly employed. Dr. Armstrong's paper upon the surgical treatment of hæmatemesis was not only a most valuable study of the results of this surgical treatment, but contained material of no little value bearing upon the possible etiology of the condition.

I have thus far left out of consideration the valuable series of papers contributed to the discussions. Certainly in the last, as in previous years, these discussions have caused greater interest than anything else and have insured large attendances. Of these there have been three, namely :—

1. That opened by Dr. Roddick upon the subject of Dominion Registration. In this in a masterly manner Dr. Roddick discussed the subject in all its bearings. It is pleasant to see that a cordial vote of thanks to Dr. Roddick for his untiring labor in bringing this subject of Dominion Registration towards a practical issue, was passed unanimously at the recent meeting of the Canadian Medical Association at Toronto. It is only what he fully deserved ; all the same, it is a matter upon which we can cordially congratulate ourselves that one of our members, an ex-president of the society, is at the head of a movement so important for the interests of the profession in this country, and it is a pleasure to see his efforts so cordially appreciated.

The second discussion was one upon the Prevention of Tuberculosis, and was characterised by the essentially practical character of all the papers. So many took part in this, and one and all presented such well-studied contributions on various aspects of the subject, that to mention any name above the rest would be both invidious and unjust. Here again the discussion led to a definite end by the passage of resolutions

brought to the notice of both the Federal and Provincial Governments, resolutions which were made the basis of a discussion on the subject of tuberculosis in the Dominion Parliament, and which we learn have not yet ceased to be active factors in directing public opinion towards this subject, for as a result of that discussion we understand that the Government, knowing that it is to be supported by the profession, (as indeed was shewn also by the resolutions passed at the Toronto meeting), is preparing to introduce legislation calculated to lessen the incidence of this disease in our country.

I feel assured, though, that this society must not be inclined to rest on its oars, nor must it feel that having gone so far, it has sufficiently expressed its views. We as a body and individually must be prepared to stir up public opinion yet further and must agitate for the construction and endowment of sanatoria for the poor in Montreal and in the larger cities of this Dominion. It is for us in the medical profession to take the leading part in the matter. Indeed, it is a subject for this society's consideration whether the time has not come for us to approach those interested in philanthropic work in this city and either to induce the Mayor to call a city meeting on the subject or to form some local society, the object of which shall be to familiarise the public with the dangers and means of prevention and of cure of this terribly widespread disease.

The third discussion was upon a subject peculiarly common in this district, namely, upon Goitre, and here Dr. Springle's paper upon the distribution of the disease in Canada, and Dr. Shepherd's upon the treatment and certain complications of the condition, are both valuable additions to our knowledge.

Yet another discussion must here be mentioned, which was continued over from the preceding session, namely, that upon Hospital Abuse. The result of that discussion has been the establishment of a committee of medical men and of those connected with our larger hospitals: a committee is pledged to establish a central hospital board. A series of regulations is now being compiled which shall be acceptable to the hospitals and to the profession in general, and which shall so far as is possible prevent the notorious abuse of our institutions by those well able to pay the fees of the general practitioner, as indeed of the consultant. It is difficult to frame such regulations, for circumstances admittedly alter cases; the man who can perfectly afford to pay for treatment for a slight surgical or medical ailment may not be able to stand the strain upon his resources which some capital operation by a specialist outside the hospital would necessarily entail. We hope that this committee will formulate some rules satisfactory to the profession in general and capable of being loyally carried out by the admitting officers of our hospitals.

These details of the work of our society show most markedly the position that our society is taking as a public body and as a former of public opinion in matters bearing upon the health of the people, as again in matters which more strictly bear upon the interests of the medical profession in this country at large.

Nor does the list above given exhaust the public work accomplished by the society. Acting under recommendations from us, Dr. Roddick procured an amendment of the Adulteration Act of the Dominion so that now one standard authority is recognised as determining the composition and adulteration of drugs, to wit, the British Pharmacopœia, which thus incidentally becomes the official Pharmacopœia of the Dominion; while again, as already stated by the secretary, a committee nominated by the society has accepted the invitation of the general Medical Council of Great Britain to take an active means to make Canada no whit behind the other colonies and British possessions in formulating an addendum to the same British Pharmacopœia. Inasmuch as the work accomplished by this committee affected the whole Dominion, it was thought well to present its draft report to the Canadian Medical Association, which body has nominated a committee composed of the old members with a few additions, and has authorised it to report directly to Great Britain.

I think I am right in saying that in no previous session has our society made its influence felt outside as it has in that just closed. Indeed, gentlemen, remembering what we are, namely, a society composed of and open to practitioners, English and French, of this the leading city of the Dominion, a society of old standing, of large membership, meeting frequently and having high ideals, we must more and more recognise our responsibility and our power in forming and in influencing public opinion in reference to all that bears upon health and the well-being of the people. Just as the individual practitioner is, in his relation to his patients, very much more than a mere drug giver—is the family adviser and the family friend—so should our society be something much more than a mere centre for the mutual interchange of views upon strictly professional matters. It should have as its object the encouragement and carrying forward of everything that bears upon the physical well-being of the community, not merely here in Montreal itself, but in the Dominion at large. Herein lies our great opportunity, and, as I say, the history of the last session shows that we can well use it for the public good.

One other and notable feature in the history of the year must not be forgotten in this brief review. I refer to the change in the by-laws, whereby all practitioners of good standing, irrespective of sex, are eligible for membership. The society was ripe for this change, and now that it has been made, it seems absurd that it should not have been made

long ago. We have had, as already indicated, one valuable contribution from the new blood thus infused.

Lastly, with so large a membership, it is inevitable that during the course of twelve months some one or other figure well known to us should depart from our midst. Happily, during the past twelve months our loss from death has been limited to but one member, one who, although he had but recently returned and settled in Montreal, had in the brief space of his residence here showed himself a keen and active member, and devoted to his special line of work, and in that special line, a student of no small ability, so that from his contributions during the previous session both of cases and to our discussions he earned the cordial respect of all. I refer to the late Dr. W. M. Nelson, and I can but repeat the terms of the resolution forwarded to his family, that "he had by his zeal, seriousness of purpose and enthusiasm for his special line of work, impressed all with his great value as a member of this society, and gave promise of a brilliant future."

It is a source of deep satisfaction to us that year by year we have developing among us more and more men who are pursuing their special lines of surgical or medical work with enthusiasm, intelligence and a wide knowledge ; men who are not satisfied to depend upon what they have learnt, but who are studying and advancing our knowledge in their respective specialities ; such men are the salt of a society such as is ours. All the same, we can ill afford to lose even one of these from among us.

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NO. 11.

THE ACTION OF ALCOHOL.

Notwithstanding all that has been written upon the subject, our knowledge of the therapeutic action of alcohol cannot yet be said to stand upon an unquestioned basis. From the clinical point of view, the statement of its action upon the circulation and the nervous system as given by Dr. Rolleston (Allbutt's System of Medicine, Vol. III., p. 840) may be said to represent the general opinion of the profession. This writer says : "After the administration of alcohol the heart beats more forcibly, and with greater frequency, the period of diastole being shortened ; the peripheral vessels are dilated, and thus the familiar flushing of the skin is produced. The pulse becomes full and frequent, the circulation more rapid, and the blood passes into the veins in a less venous condition, containing more oxygen than usual. As these effects pass off, the heart beats less powerfully and more slowly, so that the sum of the two phases is much the same as if no alcohol had been taken. Large quantities, however, diminish both the force and the frequency of the heart-beat from the first. On the central nervous system alcohol has first of all an indirect effect ; by its action on the circulation it supplies the brain and the spinal cord with more blood, and so increases their activity. It acts, however, directly on the nerve cells as a functional poison. Hence though first stimulated by alcohol, the central nervous system becomes subsequently depressed." In opposition to this view which has been stoutly upheld among pharmacologists by Binz and his pupils, Schmiedeberg, Bunge, and many other pharmacologists hold that the action of alcohol on the nervous system is that of a depressant from the beginning, and that the symptoms of supposed stimulation are in reality due to the depressant action of the drug, weakening the functions of control and inhibition, and allowing the lower centres to act more powerfully than under normal circumstances they would. Cushny, in his work on pharmacology and therapeutics just published, says that there is evidence

on every hand that even the smallest quantity of alcohol tends to lessen the activity of the brain. Wine when taken in moderate quantities in company generally produces a feeling of well being and good fellowship, along with increased confidence in the mental and physical powers of those drinking it ; but if taken without the exhilarating accompaniments of bright lights and exciting companionship, this stimulation seldom occurs. Those who advocate that the primary action is that of a stimulant point to the brilliancy of the after dinner speech, and to the feeling of increased confidence, as evidences of increased activity of the brain. But the confidence is unaccompanied by any increased physical strength; the brilliancy of speech is probably due in part to the speaker's having lost his habitual shyness and nervousness, and in part to the stimulation of the environment. The indications of excitement are absent when the associations are different, and the symptoms of depression become more distinctly manifested. On the other hand, evidences of the depressing action of alcohol upon the brain are numerous. Investigations prove that troops upon the march are able to do more work when deprived of alcohol than when supplied with it, and type-setters can do more work and make fewer errors when they abstain from its use.

Kräplin, quoted by Cushny, states that the receptive and intellectual powers were with careful measurements of the simpler cerebral processes distinctly weakened by small quantities of alcohol, while the motor functions seemed to be facilitated by small, and retarded by large quantities ; the sensation of pain is also found to be lessened by alcohol in even small amounts. Other investigators have corroborated these statements. While there is no absolutely convincing proof that no stimulation of the motor areas occurs, yet no other known drug stimulates the motor areas only without increasing the activity of the lower part of the system at some stage of its action. In the lower parts of the central nervous system evidences of primary depression are less open to question. Cushny considers, therefore, that evidence of the depressent action of alcohol on the nervous centres are numerous, while the apparent evidences of stimulation can be explained as really due to the depression of the controlling inhibitory functions. Cushny states also that there is no evidence forthcoming that alcohol increases the activity of the normal respiratory mechanism, save to a very small extent, due in all probability to a reflex action from the stomach and not to a direct action on the medullary centres. Cushny also questions whether alcohol stimulates the circulation, and says that the only real foundation for this view is the acceleration of the pulse during the excitement stage of alcoholic intoxication, an effect which may be due to increased muscular effort and not to any direct action on the heart.

Jacquet has shown that the pulse rate is unaltered by alcohol in normal

cases, provided that no excitement be produced by the environment. In animals, alcohol acts upon the muscular tissue of the heart, impairing its efficiency and weakening its contractions; it has no effect on the pulse rate, unless given in large quantities, when it produces effects similar to those described under chloroform and ether, but much less marked, namely, weakening first of the auricular and then of the ventricular systole, followed by distention of both cavities, and slowing. Cushny thinks that the slowing of the heart which often follows the administration of alcohol in fever is due rather to diminished cerebral excitement, than to a direct action upon the heart.

Cushny considers the indications for the use of alcohol ill defined. Its value in cases of hæmorrhage, shock, or severe cardiac depression from any cause, he considers due partly to the irritating action of alcohol upon the stomach and partly to a narcotic action lessening pain, and anxiety. Alcohol he considers to have, however, a distinct food value; it is easily absorbed and demands much less energy from the digestive organs than fats and starchy foods, and has a higher value as a producer of energy than sugar. It cannot supply the place of the nitrogenous foods, but given along with them it may lead to a greater economy of the tissues.

While we all recognise the fact that as a pharmacologist Professor Cushny speaks with much authority, few of us will feel inclined to discard at once the experience of the past as to the great value of alcohol as a prompt and reliable cardiac stimulant in certain atonic conditions; nevertheless the results of the many investigations summarised by Professor Cushny cannot be lightly put aside, and the question must arise whether the value of alcohol in disease, may not arise more from the fact that in febrile conditions it acts as a rapidly assimilated food rather than, as we have hitherto supposed, as a prompt cardiac and nerve stimulant.

McGILL PATHOLOGICAL MUSEUM.

During the coming month there will be a special exhibit in the Museum of a most interesting series of preparations exhibiting Polydactylism and Syndactylism, together with numerous X-Ray photographs of these conditions collected by Dr. Shepherd. A series of specimens contributed during the year by Dr. James Bell, and a collection of old medical instruments which have been brought together from the collections of the late Drs. Holmes, Howard, Ross, Fenwick and other old members of the staff, and from the Montreal General Hospital. Any member of the profession possessing old medical instruments, especially those of last century, is begged to contribute such to this collection, which it is hoped to make both interesting and valuable.

It is the intention to make similar exhibitions of other series of cases or of contributions of individual contributors to the Museum each successive month.

NEW BOOKS, ETC., RECEIVED AND NOTED.

Index Catalogue of the Library of the Surgeon-General's Office, U.S. Army. Second Series, Vol. iv. Washington, Government Printing Office, 1899.

The Hygiene of Transmissible Diseases, Their Causation, Modes of Dissemination, and Method of Prevention. By A. C. Abbott, M.D. Illustrated. Philadelphia, W. B. Saunders, 1899.

The Treatment of Pelvic Inflammations through the Vagina. By William R. Pryor, M.D. With 110 Illustrations. Philadelphia, W. B. Saunders, 1899.

Minor Surgery and Bandaging, including the Treatment of Fractures and Dislocations, The ligation of Arteries, Amputations, Excisions, and Resections, Intestinal anastomosis, Operations upon Nerves and Tendons, Tracheotomy, Intubation of the Larynx, etc. By Henry R. Wharton, M.D. Fourth Edition, thoroughly revised and enlarged, with 502 illustrations. Lea Brothers & Co., Philadelphia and New York 1899.

International Directory of Laryngologists and Otologists. Compiled by Richard Lake, F.R.C.S. Published under the Auspices of the Journal of Laryngology, Rhinology, and Otology. London, The Rebman Publishing Company (Ltd.), 1899.

The Johns Hopkins Hospital Reports. Vol. vii., Nos. 5-6-7-8-9. Operations on 459 cases of hernia, etc. By Jos. C. Bloodgood, M.D. Baltimore, The Johns Hopkins Press, 1899.

Pyorrhœa alveolaris and its Relations to General Medicine. By John Fitzgerald, M.D. London, The Medical Publishing Company (Ltd.), 1899.

A Text-Book of Mechanico-Therapy (Massage and Medical Gymnastics) especially prepared for the use of Medical Students and Trained Nurses. By Axel V. Graffstrom, B.Sc., M.D. With eleven pen-and-ink sketches by the author. Philadelphia, W. B. Saunders, 1899.

A Text-Book of Diseases of the Nose and Throat. By D. Braden Kyle, M.D. With 175 illustrations, 23 of them in colours. Philadelphia, W. B. Saunders, 1899.

Judicial Methods. Medico-Legal Testimony. The Zelner Case. By John V. Shoemaker, M.D., LL.D. Reprinted from the Medical Bulletin, April, 1899.

Notes on Malaria in Connection with Metrological Conditions at Sierra Leone. By Major E. M. Wilson, C.M.G., D.S.O. London, H. K. Lewis, 1899.

The Medical Expert's Duty and Where he most frequently Falls in it, with illustrations from the Zelner Case. By John V. Shoemaker, M.D., LL.D. Reprinted from The Philadelphia Medical Journal, April 22, 1899.

Reports for the Year 1898-99, presented by the Board of Managers of the Observatory of Yale University to the President and Fellows.

A Case of Leukæmia of the Splenic Myelogenous Variety. By Otto Lerch, A.M., M.D., Ph.D. Reprinted from the New Orleans Medical and Surgical Journal, July, 1899.

The Unreliability of a Method Considered Germicidal. By Otto Lerch, A.M., M.D., Ph.D. Reprinted from the New Orleans Medical and Surgical Journal, March, 1898.

The Surgical Treatment of Trifacial Neuralgia with Report of Cases of Removal of Casserian Ganglion. By Henry H. Mudd and N. B. Carson. Reprinted from the Medical Mirror, May, 1899.

Recollections and Reflections of a Quarter of a Century. By Stephen Smith Burt, A.M., M.D. Reprinted from the Post-Graduate, May, 1899.

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Original Communications.

SOME REMARKS ON THE SYMPTOMS AND OPERATIVE
TREATMENT OF BRONCHOCELE, ESPECIALLY IN
RELATION TO GRAVES' DISEASE.*

BY

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real General Hospital.

I have been asked this evening to say something about the symptoms and treatment of goitre, both of the ordinary and exophthalmic variety, and also the malignant form.

Simple Goitre usually commences as a small kernel like mass in one or other of the lobes of the thyroid, and gradually increases in size as the years go on. Sometimes both sides of the gland are affected and also the isthmus, but in this country at any rate the unilateral variety is the most common. This form is usually encysted, and the cysts may be multiple or single, and may contain clear or blood-stained fluid, or the contents may be solid or semi-solid, colloid material. A cyst which has suddenly become larger from hamorrhage very often when it is tense simulates a solid growth. In addition to these two forms of goitre we have cases where the gland is uniformly enlarged,—the interstitial or parenchymatous form. This kind is seen chiefly in young girls, especially at the time of puberty, and generally disappears in a few months; it increases markedly before the menstrual periods, and is often, when not of the soft, vascular variety, benefited by the administration of thyroid extract and iodides. In all these forms of goitre the general health is apt to be affected, the patients are more or less nervous, are subject to breathlessness on exertion owing to pressure of the growth on the trachea and sometimes tachycardia, in fact, some of the encysted solid forms are subjects of a kind of pseudo-Graves' disease produced by the growth.

* Read before the Montreal Medico-Chirurgical Society, June 12th, 1899.

The relief afforded by removal of the growth is often very marked, as the following case illustrates :—

Mrs. H., widow, aged 35, a telegraph operator, consulted me December, 1894 ; a delicate, highly nervous woman, with some exophthalmos, has had enlargement of her neck since childhood. Seven years ago the growth suddenly enlarged, but the enlargement lessened for a time on application of an ointment. The increase was accompanied by palpitation of the heart and great nervous excitability, from that time the gland enlarged until last summer, when it grew much more rapidly. Of late has had frequent attacks of tachycardia, and is very nervous, so much so, that she had to give up her occupation. She has great difficulty in breathing, especially when she has to exert herself. In this case the left lobe was the larger, but both lobes extend from the hyoid bone to the clavicle. The growth seemed to consist of a number of cysts, fluid and solid. Operation was performed, and the patient got rapidly well ; all nervousness and tachycardia disappeared, her eyes became normal, and she was able to resume her work.

I have many such cases in my note-book. Here we have symptoms produced by increase of thyroid tissue of the nature of Graves' disease, and perhaps pressure also has something to do with it. I have quite recently operated on a case sent me by Dr. Birkett where pressure from enlargement of the right lobe of the thyroid caused contraction of the pupil on that side, and well-marked ptosis. Operation in this case is too recent to state results, but when I last saw her, ten days after the operation the ptosis was certainly less marked.

The symptoms of Graves' disease are familiar to you all ; the highly nervous, excitable individual, with prominent eyes, enlarged, soft, vascular thyroid, rapid pulse, tremors, and often pyrexia,—symptoms which are produced by taking thyroid internally. Such cases are the exactly opposite of myxœdema, due to loss or absence of thyroid tissue. Here the patient is dull, sleepy, has a stupid expression of face, low pulse and body temperature, dry, thick skin, with loss of hair. The patient sits about stupidly idle and sleeping most of the day. One disease is the exact opposite of the other—the former due to too much thyroid and the latter to too little. The exactly opposite conditions in these two diseases seem to me to prove the theory that too much thyroid is the cause of all that group of symptoms called exophthalmic goitre or Graves' disease, and the cases I have seen of Graves' disease which commenced with enlargement of the thyroid, and where the severity of the symptoms increased *pari passu* with the continued enlargement of the gland, also tend to prove the theory that increase of thyroid tissue is followed by symptoms of Graves' disease, and when the increased tissue is removed the patient's health returns to normal, the symptoms of Graves' disease gradually disappearing. The following case illustrates this :—

Miss L., at 20, first noticed enlargement of the thyroid some years ago. Both sides were enlarged, and the gland continued enlarging. A short time after the enlargement commenced, nervous symptoms developed, such as tachycardia, tremors, etc. These increased in severity, so that on the slightest exertion her pulse was almost uncountable. Then came ophthalmos with persistent pyrexia and œdema of the lower extremities; there was also great difficulty in breathing, especially on exertion. When I saw her in 1896 she was a pale, anæmic girl, very thin, with exophthalmos and a rapid pulse—140 to 200—she was excessively nervous, had tremors, some fever and œdema of the lower extremities. Both lobes of the gland were considerably enlarged; the enlargement, whilst on both sides, was not the usual vascular, spongy enlargement of Graves' disease, but seemed to be made up of a separate solid cyst in each lobe. I advised operation, which was performed November, 1896. I enucleated from each lobe by separate incisions a solid cyst the size of a small orange full of colloid contents. The patient rapidly recovered from the operation, and was sent home in about ten days much better. I had a letter from her doctor May 18th, 1899, in which he says:—"I am pleased to tell you she is in excellent health; the respiratory trouble is of the past; the exophthalmos, the tachycardia, the anæmia and pyrexia are no more present, and she is perfectly well."

In other cases, although the symptoms may not be marked, yet the relief from operation is almost as great.

Jennie R., at 24, has, since she was fifteen years old, had enlargement of the thyroid. It commenced as a small round growth in the right side, and gradually grew to its present size. For some years, owing to tachycardia and breathlessness, she has not been able to walk any distance or to go upstairs; for some years has had exophthalmos. When I saw her early in January of this year she was an anæmic girl with prominent eyes, a very nervous manner, and rapid pulse. She had a very large swelling, which was round and smooth, extending from the sternum to the hyoid bone, and this swelling went under the sternomastoid. It was not fluctuating, soft, and did not appear to be vascular. I looked upon the case as one of large colloid cyst, and recommended operation. This was performed January 27th, 1899, and the tumour, as expected, turned out to be a colloid cyst. Hæmorrhage was quite free, and a number of ligatures had to be applied, the superior thyroid being ligated. Recovery was complicated by a continuous high temperature (104° F.) and a very rapid pulse (180-200), following immediately on the operation. The discharges from the wound were tested, and found perfectly sterile. It was supposed that this was a case of thyroid intoxication, which has been described by several writers. On giving free vent to the discharges from the wound, which were thin and watery, the tempera-

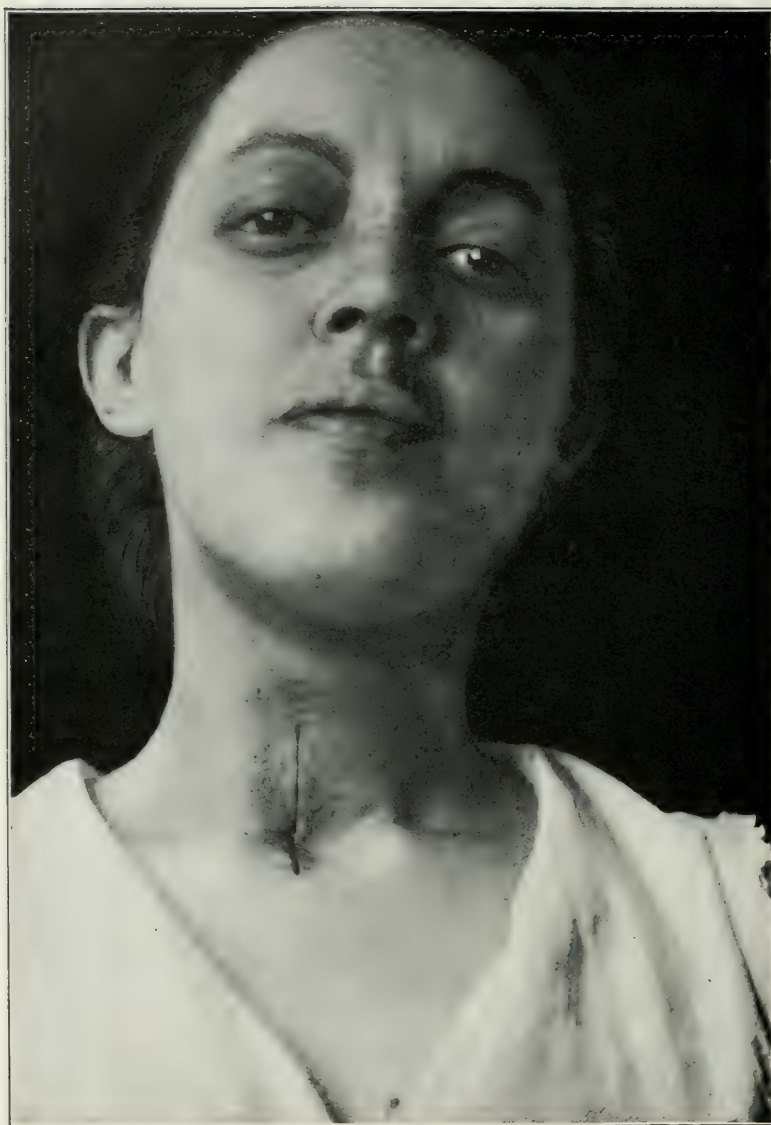
ture and pulse rapidly subsided, and the patient recovered completely. I heard from her on the 15th May. She says :—"I have begun to feel like a different person, and just wonder how I ever put in such a miserable existence as I did the last five years. You would scarcely recognize me as the same person. My heart does not palpitate as it did before the operation." (See accompanying plates.)

I think these cases sufficiently prove that increase of thyroid tissue can produce a group of symptoms very much resembling Graves' disease. Now, these symptoms in my experience only come on in encysted cases with solid cysts. In cysts with fluid contents I have never seen them, so pressure can be but a small factor in the production of these symptoms.

In cases of true Graves' disease the improvement after operation is not so great. During the past four or five years I have operated on several cases, removing one-half of the enlarged thyroid. Although in these cases there has been improvement, still it is not so rapid or so marked as in those cases where the disease in the gland is localised. In one of my recent cases, operated on in February last, the patient had all the chief symptoms of Graves' disease, such as tremors, tachycardia, pyrexia, etc., and a very large vascular thyroid. Operation relieved, and her general health was much improved, but she writes me (May 23rd) that the nervousness still continues, though the tachycardia and exophthalmos are much better, and the remaining half of the gland is much smaller. In cases of true Graves' disease operation is not without danger. It seems that the danger is chiefly due to the anæsthetic ; so much is this so, that Kocher has given up general anæsthesia in these cases and resorts to local anæsthesia by cocaine. Even with local anæsthesia the operation is a dangerous one, and in Kocher's last 15 cases of operation in Graves' disease, two died.

It is my custom to advise operation in all rapidly growing goitres, especially if they be tumours of the solid form. If there be dyspnœa, the operation is urgently needed, but even if there is no dyspnœa it is well to advise removal of those which are of recent formation and rapidly increasing in size, by early excision, that the serious train of symptoms which is characteristic of Graves' disease will be avoided.

Operative Procedures. It is always well to be guided by the kind of case in choosing the form of operation. In the simple cystic case, where the cysts are large and not more than one or two in number, I invariably enucleate by the method I have described before, a simple incision over the cyst through skin and muscles down to the gland, tying the anterior jugular if it be seen. When the gland is reached, it is incised down to the bluish-white capsule of the cyst. The recognition of this capsule is most important, and when reached the cyst can





be easily turned out. It has been my practice to open the cyst and evacuate its contents so that it then can be pulled out of a small opening, and any vessels which bleed can be easily seized as they are torn in separating the cyst. In some cases of adherent cyst the separation is very difficult, but in fluid cysts the vascularity is not so great, nor is there so apt to be an adherent capsule. In the solid, colloid, encysted growths the enucleation is more difficult owing to the greater vascularity. It is important here to get into the proper capsule, preferably the deeper one, for the superficial one is often covered with the ramifications of blood-vessels. Even in these cases, before enucleating I open the tumour and remove some of its contents; when this is done, the subsequent extraction is much less difficult. In diffuse cases or interstitial cases and the true vascular thyroid of Graves' disease, in malignant disease or where the cysts are multiple and small, or where the growth is very large, I prefer now to excise the gland. In Graves' and the interstitial cases only one lobe is excised. In these cases I make use of an incision along the inner border of the sternomastoid to near the upper border of the sternum, and then continue the incision transversely as far as necessary. Here the most important point is the free opening of the capsule of the gland. As soon as the capsule is divided the gland can be delivered and the vessels tied without much difficulty. The superior thyroid artery should first be secured, then the gland thrown up and over to the opposite side. The inferior thyroid artery should be tied and not cut, and then recurrent laryngeal nerve looked for and carefully separated. It runs up the posterior part of the gland, when the gland is enlarged it appears as if it entered it. The branches of the inferior thyroid artery with which it entwines should be cut near the gland, and also the veins which accompany these branches. I have cut the nerve once, and it was immediately sutured; the function has been partially recovered since.

The After Treatment. In the cases where enucleation has been performed there may be free oozing from the bed in which the cyst lay, and to prevent extensive oozing I pack this with strips of aseptic gauze, which I remove on the second day. In the cases where a portion of the gland has been removed a drain is inserted for 24 hours. The wound is closed with horse-hair sutures, and ordinary dry dressings applied. Usually the enucleation cases are discharged from hospital in a week or ten days.

The advantage of the enucleation method in suitable cases is the ease with which the operation is performed, the absence of risk of myxœdema and the fact that the recurrent laryngeal nerve is never injured. The disadvantages are the chance of recurrence of the growth, the tendency to oozing after operation, this oozing occasionally going on to secondary

hæmorrhage. In nearly fifty cases of enucleation, I have had recurrence in two cases—in one on the opposite side, and in the other a very small cyst on the side that had previously been operated on. Both came to me of their own accord to have the cysts removed while they were small. Secondary hæmorrhage I have seen three times—once in a young man who afterwards told me that he never had a tooth pulled without its bleeding for a week, and the other two were in women who had an apparent tendency to bleed. The blood oozed into the cavity which was left by the removal of the tumour, and only attracted notice when the breathing became difficult. In these cases the gauze had been removed too soon, for, after removal on the second day there was a good deal of oozing. In such cases the gauze should have been replaced for another 24 hours.

Should secondary hæmorrhage occur the wound should be laid open, the clots turned out, and the cavity firmly packed with sterile gauze. Swabbing out with tincture of the perchloride of iron in the more severe cases will arrest the hæmorrhage.

The cases I have seen all recovered promptly, and the scar left did not appear to be any greater than that left after union by first intention.

I have seen many malignant cases, but have only operated on three. All subsequently died of recurrence of the disease in the lungs. Unless the tumour is removed very early there is little hope of permanent relief. In all the cases I have seen the gland had been enlarged for years before it took on a malignant action.

I have only seen one case of the so-called thyroid intoxication after operation on a bronchocele. It is supposed that during operation much handling of the gland promotes excessive absorption of the fluid, and that after operation the cut surface of the gland exudes so much thyroid juice that if it is not evacuated it is absorbed and intoxicates the individual. Such cases are known by an excessively high temperature and rapid pulse after operation, at the same time that the wound is sterile. In the case I saw, the patient had a continuous temperature of 104° F. for nearly three days, and an uncountable pulse. The secretions from the wound were repeatedly examined, and were always found sterile. She made a good recovery. Some deaths from this cause are reported by Horsley of London and Paul of Liverpool.

The accompanying plates are reproduced through the courtesy of the *Annals of Surgery*, in the November number of which this article appeared.

GOITRE : ITS ETIOLOGY AND INCIDENCE IN THE DISTRICT OF MONTREAL.*

BY

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The obscurity surrounding the etiology of bronchocele in every part of the world renders any attempt of mine to place the subject more plainly before you from a study of the disease in the city and district of Montreal an extremely difficult one, in fact, an almost impossible one.

The absence of statistics relating to the Province of Quebec, or even to the Dominion, is well known to you, and had it not been for this fact I would not have ventured to speak upon the subject at all, for I have not a table of cases sufficiently large for it to be of any weight. However, during the last five or six years I have been interested in this disease and in its prevalence in the country parts about Montreal, and from my experience alone do I base any statements I may make. I have no theory to advance, but have simply to place certain facts before you for any consideration you may deem them worthy.

In sojourning here and there throughout the country districts of Montreal Island, and still more so in other more remote parts of this Province, one will, if observant, discover that goitre is a very common disease indeed. It ranges from the slight fulness of the neck, which adds if anything to the appearance of a throat otherwise to be considered too thin, to the huge pendulous growths which cause much disfigurement and often threaten life, and are consequently brought to our city hospitals for treatment. For the past five or six years I have had an opportunity of observing the extent to which this malady exists, and more particularly in the Laurentian Mountains.

Here, the population is of course largely of French origin as in the rest of the province. But if we penetrate further back, we come upon half-breed mixtures of Scotch, French, Irish, and English, with the Indian, and here and there may encounter the Eskimo type. This latter is occasionally to be met with in the valley of the St. Maurice River, and came originally from Hudson's Bay and Labrador. Although I am unable to present to you a table of statistics, yet I may be allowed to present facts that I have from time to time verified. In this part of the Laurentian mountains goitre or "grosse gorge" is usual in all those born and brought up there. And although the condition is perhaps more frequent among females, yet a slight fulness or prominence

* Read before the Montreal Medico-Chirurgical Society, June 12th, 1899.

of the gland is to be observed in a very large number of males. It appears to me that the disease is more limited in the males except in rare cases ; and I have seen one of two of the latter where the growths were very large.

A case of goitre occurring in the city of Montreal in an individual born and brought up here, appears to be quite rare, and, so far as I can learn, this applies to all large villages and towns in this province. It is a significant fact that the smaller the community and the more isolated this community is, the more is the disease observed to occur. Nearly all goitrous cases seeking medical and surgical relief in this city are from the country parts and, as far as I can learn, these cases, are from farms separated from one another by quite a distance in most cases, and but rarely from the villages or towns themselves. Goitre undoubtedly is seen in villages and towns, but in tracing the case it will usually be found to be from the scattering outside population.

Goitre is not supposed to be endemic in this city and all cases arising *de novo*, therefore, must be considered as sporadic.

It might be well to enumerate the various factors considered by many observers in many countries to influence or favour the occurrence of the disease. These are :—

- (1) Water containing an abundance of certain salts.
- (2) Certain degrees of altitude and conditions of climate.
- (3) Consanguinity and heredity.
- (4) Improper hygienic surroundings.
- (5) Sex and age : the incidence of the disease with the establishment of the sexual life.
- (6) Certain occupations involving strains upon the head.
- (7) Micro-organisms.
- (8) The association of cretinism and myxœdema with goitre.

Let us consider the conditions under which the farming class or "habitants" are placed. Throughout nearly the whole of the inhabited areas of the province of Quebec the geological formation is that of the Lower Laurentian of Logan, extending from the Straits of Belle Isle in Labrador to the Ottawa river. The south-western part is of a dolomitic limestone covered by Lower Silurian limestones (Trenton and Chazy). The flatter or lower levels are covered by Pleistocene deposits of the glacial periods. The province is richly endowed with minerals such as iron, copper, phosphates, etc. The people as a rule live very comfortably ; their houses are warm and they are warmly clad. Their diet usually consists of fish, salted and smoked meats, eggs, milk, and bread during the hot summer months. In the winter, when meat can be kept cool or frozen, it is to be seen even on the poorest tables. The principal vegetables used are potatoes, onions, carrots, and turnips, the

two former in abundance. It can hardly be said that our farming classes, even those pioneers on the borders of the backwoods, suffer from lack of food, clothing, or warmth in winter. Their sanitary arrangements regarding the disposal of sewage and garbage are often primitive, but this condition is not as apparent as in the more settled areas, and must certainly compare most favourably with the rows of privies in the dirty back yards and lanes of Montreal.

In the more remote settlements it will be found that intermarriage, not only among the French but also among the English-speaking people, is quite common in spite of the edicts of the Church, even to the extent of first cousins. This state of affairs is to be expected where means of communication with the outside world are limited and where the infusion of new blood is rare. In many small villages even on the Island of Montreal intermarriage is quite common.

The altitude of the different parts of Montreal Island and surrounding country varies considerably, but nowhere can it be said to be extreme. The country south is flat and often sandy with outposts here and there of the Laurentian hills. The climate is practically the same over the western part of the province.

The water used by the inhabitants of course must vary. Those living inland use wells, and those close to rivers and large streams avail themselves of this source of supply. Cisterns for the collection of rain water are occasionally seen, but the people do not use the water unless obliged to. So we may divide the goitrous districts into those using well water and those using river water. On the St. Maurice river the settlers use the river water almost exclusively; I have not seen a well in the upper part of that district. As you are well aware, this is quite a large river, over 400 miles in length, and flowing over a rocky and sandy bed almost without exception. All its tributaries rise in the Laurentian Mountains. Lime, iron, and copper occur in quantities here. It supplies what we would call a good drinking water of a moderate degree of hardness.

As I have already said, goitre is exceedingly common in the St. Maurice region; but so far as I have seen, it is not common in the city of Three Rivers or in the larger villages adjoining. Upon the Island of Montreal, excluding the city itself, the people use the Ottawa river water except when residing some distance from the shore. Goitre occurs here and there from one end of the island to the other, except in the more thickly settled parts. One family on Isle Perrot has several cases of goitre, and I am told it is more or less prevalent in the neighbourhood. I think you will find that along the shores of the St. Lawrence below this city goitre is common among the inhabitants outside of the villages and towns.

I have never seen a case of cretinism that I could associate with goitre in the country. In any case, it is rare. I believe but two or three cases exist among the 1800 patients in the asylums for the insane in this island. That goitre is one of the stigmata of degeneration is not the experience of the alienists of this province.

Myxœdema is also a rare condition. Kocher perhaps rightly calls it thyreopriva, the gland substance having disappeared through disease or otherwise.

It is interesting to note that in this province the animals also suffer in goitrous areas. From an examination of many wild animals, ruminants, rodents, and carnivora, from the St. Maurice region, not one case of enlargement of the thyroid was found. Yet, so far as man is concerned, both Munson and Duck point to the great prevalence of goitre among the Indians.

Race appears in this district to exert no effect upon the production of goitre. Bowers, in writing on the Bronchocele of Lower Canada in 1830, considers it usual among the French, and attributes it to the use of snow-water, climate, and improper clothing and food. Adami, in reviewing the subject in Sajous' *Cyclopædia of Medicine*, thinks that not one of the causes can be said to be in action in every case. Gordon Holmes asserts that sporadic goitre is more liable to occur in females, and that the endemic attacks both sexes.

It is probable that not until cases are properly classified and analyses, chemical and biological, of the waters and soils of goitrous areas made, can we add to the knowledge we already possess. But it appears to be probable that here, as well as elsewhere, water is responsible for the existence of the disease. Whether it is due to one or many organisms or their products or to certain salts or combinations of salts remains yet to be discovered.

Heredity has been placed by some as a probable cause. Goitre frequently occurs in those born in goitrous districts, yet both parents are free from the disease. Congenital goitre is as rare about Montreal as it is elsewhere. In cattle, sheep, horses and dogs, it is not uncommon in all goitrous districts, and the young frequently succumb to it. Dr. Baker (D.V.S.) informs me, however, that in sheep and calves that if they live for a little while the swelling may entirely disappear.

Both heredity and consanguinity may be a predisposing cause hereabouts, but it is difficult to directly attribute the disease to either of these factors in goitrous countries.

So far as I have been able to ascertain, the incidence of the disease corresponds usually with the beginning of the establishment of the sexual functions in both sexes. In this district, as elsewhere, the age varies but little—nine to sixteen years. Professor Gaskell draws atten-

tion to the possibly sexual character of the thyroid from studies on primitive vertebrate types. This may account for the increase of the gland in size under certain conditions.

The carrying of heavy weights upon the head has been thought to be a factor by many observers. In our country districts the women, in which it is said the greater percentage of goitrous cases occur, do not employ this means of carriage as in some other countries. Among the men in some of the remote parts of this province a collier or head-pack strap is used. This passes over the forehead and the weight or pack is placed over the lumbar region. One will frequently see the *habitants* use a form of collier or shoulder board for a bucket at each end, similar to those used in the provinces of France. It is hard to prove from an anatomical standpoint that the carrying of weights in the manner described should cause goitre by vascular congestion or stasis.

Recently, an attempt has been made to trace the disease to a micro-organism. Kocher found 33 species of bacteria in goitrous water against a very much smaller number (nine) in non-goitrous water. He or his collaborator (Prof. Travel, University of Berne) were unable to fix upon any one micro-organism as specific, however. Yet these bacteria collectively caused enlargement of the gland in guinea-pigs. Kocher is non-committal upon the subject, *i.e.*, the active agent. Lustig and Carle also mention the large number of bacteria found in goitrous water, and have cultivated a bacillus. They have induced goitre in dogs and horses by this water.

Mitchell is inclined to think that goitre, from a study of it in relation to malaria among the troops in Assam, is possibly due to an amœboid organism, perhaps possibly resembling Laveran's corpuscle.

Whether the waters of this district or province will throw any further light upon the subject remains to be seen. A large field of investigation remains open. Goitrous areas, removed from the main rivers and in which the inhabitants use well water are seen in many places about this city. Goitre occurs to a moderate degree. In a small settlement some distance back from Vaudreuil the farmers are markedly goitrous. To the south of the city, in the Townships, and especially in the county of Beauharnois, it is prevalent. East of Montreal, in the counties of Berthier and Terrebonne, it is also common. In these latter areas, however, river and well water are both used.

As you are well aware, goitre has been from ancient times considered a water-borne disease, and the prevalent opinion has also been that goitrous water was that holding in solution large quantities of lime, iron, copper, and magnesium salts. These minerals do occur in more or less quantity hereabouts, but I have not been able to obtain a single

analysis of the inorganic materials even in Montreal city water supply. That made some time ago by Dr. Ruttan was to ascertain the organic materials only.

Kocher's elaborate investigations in the Canton of Berne, Switzerland, in which over 76,000 school children were examined, brings to light some new and interesting facts. First, he believes that certain waters contain the *materies morbi*. He mentions certain goitrous wells which invariably produced the disease. Again, upon analysis of non-goitrous wells and springs, he finds that their water contain four times as much lime and twice as much magnesia in solution. Goitrous and non-goitrous wells may be but a short distance removed from one another. He emphasizes the fact that water from the so-called fresh water sandstone is particularly goitrous. Manson, Glover, and Mitchell, having investigated the matter, do not believe that alkalinity is a causative agent. Armaingand mentions the significant fact that all other supposed causes of goitre having been removed, still the disease remains quite as prevalent.

THE WISDOM OF SURGICAL INTERFERENCE IN HÆMATEMESIS AND MELÆNA FROM GASTRIC AND DUODENAL ULCER.

BY

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Hæmatemesis, although a common symptom in gastric ulcer, is rarely sufficiently large in quantity to cause anxiety, yet the mortality from hæmorrhage in this condition of the stomach is not inconsiderable. Leube estimates the mortality to be about 5 per cent., and Welch at from 3 per cent. to 5 per cent. The question of the propriety of surgical interference in certain cases has received considerable attention of late, from surgeons as well as physicians, and the general tone of the medical press at the present time is very conservative indeed. It may be said that while there is, perhaps, a fairly general consensus of opinion that the surgeon should be consulted in cases of frequently repeated small hæmorrhages, which, in spite of rest, abstinence from stomach feeding, and medical therapy, continue to recur and threaten the patient's life: yet it is as a last resource, and that in the presence of large copious hæmorrhage, surgery is of little or no avail. There seem to be two very good reasons for this opinion in the facts that the large majority of cases recover under medical and dietetic treatment, and that surgery up to the present has not been particularly successful. Mikulicz has operated four times, and three of the four patients died, and adds that he only knows of two successful cases, the one of his own and one of Roux. Hartman* has collected 12 cases of operation, only four being successful; and would be inclined to trust to rest, strict diet, and the application of ligatures to the four extremities, with the addition of intravenous injection of normal saline solution.

On the other hand, Dieulafoy strongly urges immediate operation in every case of hæmatemesis in which the loss of blood equals or exceeds half a litre, especially if it recurs within twenty-four hours, and reports a case of hæmorrhage from a superficially ulcerated patch, in which he gathered up into a fold the ulcerated mucous membrane and ligated it, with recovery. Keen, in his Cartwright lectures, takes the conservative view of Mikulicz and Hartman and would abstain from operative measures except in cases of repeated small hæmorrhages, which will almost surely finally destroy life. Leube says surgical interference is absolutely indicated by repeated small hæmorrhages, especially if accompanied by

* Sem. Méd., 1898, pp. 7-8.

dilatation of the stomach, and relatively indicated by a large hæmorrhage, yet never by one single vomiting of even a large quantity of blood.

My attention was particularly directed to this subject by the following case, successfully operated upon and which I will report very briefly :

On July 21st, 1898, I was asked by Dr. George Wilkins (Montreal) to see with him a lady, 35 years of age, who had had repeated copious hæmorrhages from the stomach for seven days. Previous to this her health had been good and she had not had any of the symptoms of gastric ulcer. Her present illness began just one week prior to my first visit. Her family history was negative. I found her blanched, mucous membranes and finger-nails white, and the slightest exertion was followed by dyspnoea. She had been treated by absolute rest in bed, rectal feeding, only small bits of cracked ice being given by the mouth, also hypodermic injections of morphine and ergotin, large doses of bismuth and acetate of lead, without any apparent lessening of the quantity of blood vomited, nor did turpentine in emulsion succeed any better. Her temperature was 100° F., and her pulse rapid, very compressible and shabby. On the following day we decided that operative treatment alone gave any chance of recovery, and had her removed to the Montreal General Hospital. Her temperature on admission to the hospital was 102 $\frac{4}{5}$ ° F., pulse 136, respirations 44. As soon as possible I exposed the stomach, through an incision in the median line, drew the stomach well forward, and after carefully packing around to protect the peritoneal cavity, opened through the anterior wall. After washing out some blood clots a careful search was made for the bleeding point. No deep excavated ulcer was found, but blood was seen oozing from three different places, which looked like linear fissures in two instances, and in the third like a stellate fissure. Around the fissures, over an area of about 1 cm., there was apparent a superficial loss of surface epithelium. From the stellate fissure blood seemed to come from three small vessels. The flow of blood was completely arrested by the application of the Paquelin cautery, and the stomach and abdominal incisions were closed without drainage. The subsequent course of the case was one of uninterrupted convalescence. The nausea disappeared, no vomiting occurred after the either or subsequently. I began stomach feeding the following day, and from that time on she took nourishment by the mouth, although rectal feeding was continued for four or five days. While I was operating, an assistant gave an intravenous injection of forty ounces of normal saline solution. The woman is now quite well, not anæmic, has perfect digestion and assimilation, and is living an active life.

I have permission to report the following very instructive case :

On February 6th, 1899, I was asked by my colleague, Dr. Elder, of Montreal, to see with him a lady aged 42. This lady, on returning home

that afternoon after doing a little shopping, and without having had any previous symptoms referable to the stomach, vomited a large quantity of blood—I can safely say 10 ounces—and notwithstanding complete abstinence from food by the stomach, absolute rest in bed, ice over the epigastrium, and the administration of such drugs as morphine and ergotin hypodermically, acetate of lead and turpentine, the vomiting of blood in considerable quantities continued to occur at intervals during the following day and night. Early on the morning of the third day, or about forty hours after the first hæmatemesis, she was removed to the Montreal General Hospital. As she felt somewhat better after getting to the hospital she was allowed to rest. No vomiting occurred until a little after three o'clock in the afternoon, when she brought up about 12 ounces of blood. At 5 p.m. she was placed upon the table, ether administered, and Dr. Elder brought forward the stomach through a median incision. After carefully packing round about, the anterior wall of the stomach was opened, and a large, deeply-excavated ulcer about 1 inch long by $1\frac{1}{2}$ inch wide was at once seen. It was situated on the lesser curvature 5 cm. below the œsophagus. In the centre of the base was an open artery, from which the blood poured freely. The vessel was secured by a catgut ligature carried through the base of the ulcer, just beneath the opening in the wall of the vessel on a curved needle. This arrested the hæmorrhage completely. A row of addition sutures was carried across the floor of the ulcer in such a manner that the floor of the ulcer was somewhat elevated and the edges approximated. After closing the opening in the anterior wall of the stomach the abdomen was closed without drainage. Unfortunately this patient died from acute anæmia the following day at 1 a.m. Among other things $1\frac{1}{2}$ litre of normal saline solution was administered subcutaneously, and an equal quantity *per rectum*. At the necropsy it was found that no bleeding had occurred after the operation.

The following evening when I sat down quietly for that period of retrospection and introspection that, I fancy, is not foreign to the experience of any surgeon, I came to two conclusions: First, that this woman's life would in all probability have been saved if she had been operated upon after the second hæmorrhage; and, secondly, that the tone of advice, given to-day in the medical and surgical literature was responsible for the delay. I felt that had I another similar case, early operation would save it. But, as Carlyle says, "It is easy to be wise behindhand."

With a view to getting further information on this question of the operability of these cases, I asked Dr. Wyatt Johnston, Pathologist to the Montreal General Hospital, to give me extracts from the reports of all necropsies performed on patients who had died from gastric hæmorrhage. From Dr. Johnston's report I find that in a series of 2,000 necrop-

sies, 15 or 0.75 per cent. died from hæmorrhage from the stomach. Of these 15 cases, in 5, or $33\frac{1}{3}$ per cent., the hæmorrhage was from a gastric ulcer; in 4, or $26\frac{2}{3}$ per cent., from an ulcer in the duodenum; in 1 from rupture of an œsophageal varix, secondary to thrombosis of the portal vein, atrophy and sarcoma of the liver; in 1 to rupture of an œsophageal varix secondary to cirrhosis of the liver; in 2 to leucoeythæmia; and in 2 to aneurysms rupturing into the lower end of the œsophagus.

I will now in as few words as possible state just the condition found in each of these cases of gastric or duodenal ulcer:

CASE I.—Female, aged 40. Fatty and cirrhotic liver, atrophic spleen, no ascites, fibroid kidneys. About the middle of the lesser curvature an ulcer, almost circular, three-quarters of an inch in diameter, with sharply cut edges which are not raised. In the centre of the floor is an open artery, not plugged, and readily admitting a small probe.

CASE II.—Male, aged 50. Chronic ulcer of the stomach, perforation, and hæmorrhage. In the peritoneal cavity is half a gallon of thick, dark-red fluid. Three inches from the pylorus is a large perforation in the anterior wall of the stomach, occurring in the base of an ulcer 6 cm. long by 2 cm. wide. A branch of the gastric artery ulcerated through has an orifice into which a small probe can be passed.

CASE III.—Female, aged 20. Lower two-thirds of the œsophagus dilated, and on cutting it open a number of irregular elongated losses of substance are seen; the strands of tissue between these look cicatricial. About the middle of the posterior wall of the stomach is a yellowish slough 6 mm. in size, and extending 3 mm. to 4 mm. deep, reaching into the muscular coat. No plugged vessels detected.

CASE IV.—In the fourth case there was found an oval loss of substance on the lesser curvature, three inches from the pylorus; size, 3 cm. by 2 cm. Edges round and clean cut, base made up of dense fibroid tissue. In this the ends of obliterated as well as open vessels are seen—the latter very numerous, four of these presenting gaping orifices. On injecting water into the gastric artery it flows in a free stream from the largest of these orifices.

CASE V.—The necropsy report of Dr. Elder's case, already sufficiently reported.

CASE VI.—The report of a duodenal ulcer, unfortunately mislaid.

CASE VII.—Duodenal ulcer, oval in shape, situated immediately outside the pyloric ring, 1 in. long in the axis of the gut and $\frac{3}{4}$ in. wide; deep, with rounded edges, which are much undermined. Immediately in the centre of the floor is a small dark elevation, blood-stained, and consisting chiefly of fibrin. On injecting water through the hepatic artery, small clots are washed out from this, and the water flows freely from the floor of the ulcer.

CASE VIII.—Male, aged 72. Immediately below the pyloric ring is an irregular ulcer extending through the greater part of the gut.

CASE IX.—Stout middle-aged woman. In the stomach, which is of large size, is found about 30 ounces of blood mixed with remnants of food. Mucosa dark and blood-stained, otherwise unaltered. Immediately outside the well-marked pyloric ring is a large ring, 3.5 cm. by 1.5 cm. in size, partly blocked with clot, which, when removed, allows the insertion of two fingers as far as the second joint into an oblong cavity, the size of a small orange, beneath the liver and gall bladder. The edges of the orifice are smooth and rounded. A probe passed into the right branch of the hepatic artery enters the cavity, and on slitting it open the wall of the artery is seen to be ulcerated across. The loss of substance on the vessel wall is about 2 mm. by 3 mm. The wall of the sac is partly formed by the wall of the gall bladder, which is sloughing in places.

Dr. Wyatt Johnston adds that, "The pathology of gastric and duodenal hæmorrhage as illustrated by *post-mortem* examinations shows the following conditions to be the commonest :

"1. Bleeding from an eroded surface, or from an eroded vessel in the base or wall of an ulcer.

"2. Bleeding from passive congestion, as in cirrhosis of the liver or other forms of portal obstruction, or in heart disease. In most of these cases the serious hæmorrhages come from œsophageal varices.

"3. Abnormal states of the blood, as in leukæmia (usually associated with portal obstruction), also rarely in hæmophilia, etc.

"Besides this, from reflex causes, such as vicarious menstruation, the blood may come, not from the stomach or intestine, but from some adjacent organ, as in aneurysm. Traumatic causes are rare.

"It must be remembered that an addition to hæmorrhagic conditions, properly speaking, we frequently find minute ecchymoses and hæmorrhagic erosion of the mucosa whose pathological significance is doubtful and which have no well-recognised clinical correlation. These often represent merely terminal or even agonal changes. The dilated venules of the stomach mucosa are distinguishable from ecchymoses on careful examination, but the difficulty of interpreting the fine *post-mortem* changes in the stomach mucosa is increased by the rapidity with which softening and autodigestion occur in it. It is often impossible to recognise blood in the gastro-intestinal canal by ordinary microscopic or spectroscopic tests, though the hæmatoporphyrin spectra are usually obtainable. Concentrated carbolic acid makes a good solvent for blood so altered. Preliminary hardening for twenty hours in Mueller's fluid has been recommended as a means of recognising *post-mortem* the otherwise invisible points of hæmorrhage in newborn children. It is difficult

for a pathologist to see why the operative treatment of eroded varices at the œsophageal end should offer any insuperable difficulties. Gastric ulcers differ from ordinary ulcers by the small amount of granulation on the surface and of superficial inflammatory exudation at the margins, so that the degree of vascularity is relatively small."

We learn from the *post-mortem* reports, in addition to the fact that in some instances serious complications resulted from what may fairly be termed an unduly prolonged period of progressive disease, that the hæmorrhage was in every instance arterial, and that there was loss of substance by ulceration in an artery of sufficient size to cause death from hæmorrhage. This observation is quite in accord with the statement made by Orth in the fifth edition of his *Pathologisch-anatomische Diagnostik*, pp. 500, namely, "that with reference to the origin of gastric hæmorrhage we must remember that the blood supply comes from the deeper layers, and that the arteries, while still in the deeper parts of the mucosa, break up into capillaries, so that on the surface of the mucosa the only vessels are venous capillaries and small venules."

Clinically, we divide cases of hæmatemesis into two distinct classes, those in which occur frequently repeated, small hæmorrhages, and those in which the loss of blood is in larger quantities, and it would seem that each class has a distinct pathological lesion, and this should be borne in mind in the consideration of the treatment of hæmatemesis, medically or surgically; and, however efficient hypodermics of morphine and ergotin may be in small hæmorrhages coming from the capillaries and small venules of the surface of the mucosa, it may not be, I trust, considered rank heresy to question their therapeutic value in the presence of a considerable lesion in the wall of a considerable artery. It is also to be noted that the bleeding point in the cases which I have reported was in every instance accessible, situated in a part of the stomach wall that could be readily come at, or, if duodenal, in every instance it was outside the pyloric ring.

If then, we can exclude aneurysm, which should generally be possible, and leukæmia, which should be possible with the aid of the microscope, and cirrhosis or other cause of portal obstruction, I hold that the surgeon's duty is to interfere in suitable cases; and if you will permit me I will offer as a definition of suitable cases:—those, first, of frequently repeated small hæmorrhages, which persist in spite of medical and dietetic treatment, and which threaten to destroy the life of the patient; and, secondly, in all cases of a large hæmorrhage which, in spite of medical and dietetic treatment, recurs. In these cases I advocate operation after the second hæmorrhage.

For hæmorrhage occurring in cirrhosis and portal obstruction, I do not think that the surgeon can accomplish any good. In these cases

the hæmorrhage is generally from a varicose œsophageal vein, a part difficult of access, and secondary to a pathological lesion but little amenable to any form of treatment.

In the case of gastric and duodenal ulcer, however, the conditions are totally different. The lesion is primary and local, and in addition to the securing of the bleeding point, a more smooth and rapid convalescence is secured, the likelihood of perforation removed, and if found advisable the performance of a gastro-enterostomy or pyloroplasty secures to the stomach that rest which so favours the healing of the ulcer and ensures against the subsequent occurrence of narrowing and obstruction at the pylorus.

[For the report of a second successful case see page 932 of this number.]

NOTES FROM PRACTICE IN THE ARGENTINE REPUBLIC.

BY

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To start with, I am not a "scribbler," and am not going to pretend to be what I am not : my aim is simply to put in writing the histories of some of my cases which I, perhaps wrongly, consider out of the ordinary run, paying special attention to the practical side. I am not going to follow the dates, but simply pick out cases or series of cases here and there which to me seem fittest ; above all, I intend writing out those in which I have been wrong in diagnosis or treatment. What is the good of only writing down the cream ? One man's mistakes, confessed, may save the life of some poor human. Confessions there will be, and perhaps my cases will be open to the stinging pen of the critic. Let my readers, too, remember, while reading these notes, that the difficulties under which I have often operated were at times so great that only one accustomed to them would have dared to interfere.

As some of my readers may remember, I left for this country immediately after graduating from McGill in 1890, and, owing to laws which do not allow foreigners to practise without first passing the corresponding examinations, I could not practise in any town where there was a received Argentine physician : I was forced to go to a place where there was no licensed doctor. I went to Patagones on the Rio Negro, a small town of three or four thousand inhabitants, including the smaller town of Viedma on the opposite bank of the river. Owing to the great distance and want of communication, these towns had then no received medical man.

About a week after reaching Patagones, a gentleman, well dressed and apparently well-to-do, walked into my office. He told me that for twenty years he had made it a practice to consult every new "medico" who came to the town ; that they had all seen and prescribed for him, but that not one of them had been able to cure him. I naturally asked him what was the matter, and he showed me a long prepuce which was cracked on the surface over which the urine passed. I told him that I would cure it for him in a week and that it would never come back again. He was very pleased and asked me for the prescription. I showed him a bistoury, and told him that that was the only receipt that would cure him, at the same time explaining to him the cause of his trouble and the proper way of curing it. He would have none of it, but wanted a salve or lotion. I told him that I did not want to be on the

list of which he had just told me, and refused to give him a salve. Some days later I circumcised him with natural results,—radical cure, happiness, etc.

That small operation gained for me more than any other I have ever done : more reputation, more future operations, more fees, more everything. It was plain I knew more than any man who had been in Patagones for twenty years previously. I could not kill ; if a patient of mine died it was because " God willed it," not from bad attendance, or from wrong diagnosis or treatment. This gave me courage ; I began working at surgery, and have kept at it ever since. At present I hardly do anything else, and have gained a reputation, if I, myself, may say so. I will now relate another operation, done eight years later, which did the same for me in another part of the country, as the circumcision of Don G—— M—— did in Patagones.

Fœcal Fistula following Pelvic Abscess Cured by Operation.

On January 13th of this year I was called to see a Mrs. G., wife of a lawyer in Rio IV. Rio IV. is a good big town in the province of Cordoba, a day's journey from here by train. I happened to be there for a couple of days on military business. Her history was briefly as follows:

Age 21 years, married twice, fairly good general health. At her first confinement, eleven months previously, she had had puerperal fever, and as a sequence an abscess of the broad ligaments (judging from what her medical man told me), which was too high and too far out on the pelvic brim to be opened per vaginam. This abscess, the size of an orange, had been opened in the left inguinal region by Dr. Norona, who afterwards assisted me at the radical operation. A fistula resulted, for which she was taken to Cordoba, where she was treated by scraping the fistulous tract, and, later, burning it with nitrate of silver. She was sent home as well, but almost immediately the fistula opened again and she went to Buenos Ayres, to one of the best clinics there, to be treated. More or less of the same treatment again healed the sinus, and at the end of two months she again returned home considered to be all right. In a week's time the fistula had re-opened.

At the date on which I saw her, she had been home from Buenos Ayres about three months, and had a small fistula in the left inguinal region into which water, on being syringed, found its way into the rectum and was expelled in a few moments by the anus, proving without doubt the nature of the sinus. I proposed a radical operation, and consent being obtained, decided to operate next day, as my sojourn in Rio IV. was very limited. A dose of calomel was given, she was told to take only liquid food that day, and antiseptic cloths were applied to the

abdomen. A clyster was given next morning, and, assisted by Dr. Norona and my soldier nurse who was with me, the operation was undertaken.

I first made an incision from the anterior superior spine of the ilium, of about five inches in length, in the direction of the symphysis pubis, going through all the coats of the abdominal wall. I found the omentum adherent all around the fistulous tract, which held a metal probe as a guide. After much trouble, I was able to clear this away and get down to the sigmoid flexure, which was firmly fixed by adhesions. These adhesions were broken down and the gut relieved, but not sufficiently to admit of its being lifted out of the abdomen. Boracic acid gauze wrung out of hot saline solution (six grams of sodium chloride to the litre) was packed in to prevent the small intestines from being cooled or soiled. I then made another skin incision, beginning and ending at the same points as the first, but running in a curved line half an inch below the opening of the fistula. This incision was dissected down in the same way as the first until I finally got the tract of the fistula in its whole length separated from the surrounding tissues. I next cut this off flush with the gut and removed the elliptical piece of skin, etc. The hole in the gut thus produced was about a quarter of an inch in diameter. First clamping the intestine on either side, I now cut out a ring of the degenerated bowel around this hole until I got into what I considered sound gut. The opening was now an inch and a half long in the transverse axis of the bowel and about an inch in diameter in its long axis. I decided to simply stitch up this opening hoping, as I still hope, that the calibre of the gut would not be sufficiently reduced to produce any difficulty later on. I used Lembert's suture and silk No. 0, bringing up and covering over the wound with peritoneum. I thought it prudent to put in a gauze drain on account of there having been an escape of a few drops of pus when I cut off the fistula. The rest of the wound was stitched up in three layers, and my patient came out of the chloroform.

The next morning I left Rio IV., and for the rest of the history I am indebted to Dr. Norona, the resident physician. On the third day the gauze drain was removed, and there being a little pus, a fresh one was introduced. On the fourth day the temperature rose and, on removing the dressings, there was a slight discharge of fecal matter. From this time on slight fever was noted and the dressings were changed twice a day, the bottom of the wound being dried with gauze each time, until at the end of five weeks the opening had completely closed. I have seen the patient on two occasions since, in April and again in the last week of June, and she is quite well and without any sign of a return of the fistula.

Nephrectomy Without a Ligature.

On February 25th I was called in consultation here (Mendoza) to see a lady, Mrs. A., 28 years of age, married six years, no children, who had been in bed for nine months. She gave me the following history :

Nine months before a swelling appeared in the right side, gradually became of an enormous size, and finally broke in the right loin, discharging at first watery pus, which later became much less fluid in consistence. Three months ago she began to lose the use of her right arm, especially of the shoulder muscles, which were greatly atrophied. Movement of the joint was painful and much limited. Near the end of the last rib there was a fistula which was discharging pus freely. On introducing a probe, I found it to be very deep and running in the direction of the anterior superior spine of the ilium, but I could not, as I expected, find an opening leading into the kidney. The following day I examined the ureters by Kelly's method. On the right side the catheter would not enter the ureter beyond a couple of inches, and no urine came away through it. I then felt sure, although I could not find the opening, that the fistula undoubtedly led to the kidney; and I decided to operate.

On February 28th, assisted by Dr. Goldsack, I introduced a grooved sound into the fistula, and splitting it up, soon found the opening into the kidney. On enlarging the wound, the kidney was found large and white, and on being incised, showed evidence of fatty degeneration, but little blood escaping from the cut surface of the organ. To get more room I cut away the lower third, after first passing a Lawson Tait knot around it. Then, freeing the remainder of the kidney, I placed a ligature around the vessels and cut the organ away with scissors. I next introduced, guided by my fingers, a pair of scissors to cut the ends of the ligature which had been left long. By some mistake I cut the ligature itself, and to my surprise pulled it away. To my greater surprise there was not any hemorrhage at all : not a drop of blood came away. On investigation the artery was found to be completely obliterated. A nephrectomy without a ligature is, I think, rather rare.

I filled in the cavity with gauze and sewed up the wound, leaving a place for a gauze drain. Recovery was uneventful. The patient was up on the 23rd day, and the cavity had filled up by the end of the month, leaving only a skin deep fistula, which healed two weeks later.

This patient has gained some thirty pounds since the operation, and has gradually been recovering the use of her arm under treatment by massage and passive motion.

I have operated five times on the kidney, twice for stone, two nephropexies and the above nephrectomy. On again attempting the latter

operation I would try the incision recommended by Langenbüch instead of the lumbar incision, which gives very little room. Had the artery not been obliterated in this case, it is doubtful if my patient could have withstood the hæmorrhage. The lumbar incision suits very well for nephrolithotomy and nephropexy.

Interstitial Pregnancy Mistaken for a Myoma Uteri—Operation—Recovery.

On June 24th I was called to see a woman supposed to be suffering from a fibroid of the uterus, and who gave the following history:—

S. A., aged 38, has been married 20 years, and is the mother of seven children, the youngest of whom is four years of age. Two years ago she began to suffer from metrorrhagia, the flow at times lasting from one menstrual period to the next. After lasting about a year the hæmorrhages suddenly stopped, and about this time she began to have severe pains in the abdomen and noticed a lump growing. In April she came in from the country to the native hospital here, and, when I saw her, was still complaining of pain, for which she had been given morphia continuously since her entrance to hospital. There was great emaciation, probably partly on account of the morphia which she had been taking, but beyond this her general condition was good. The urine was normal. On examination, I found the uterus in a position of exaggerated ante flexion and a sound entered 8 centimetres. The tumor, which was about the size of an adult head and reached three inches above the umbilicus, was very hard, but free from nodules, and evidently fixed to the uterus, which moved with it. Pressure of the tumor had produced constipation only relieved by clysters. I came to the conclusion that it was a myoma, probably submucous, and decided to do a hysteromyomectomy as described by Kelly in Volume II. of his Operative Gynæcology.

After a dose of calomel (0.50) and preparation of the abdomen, on June 26th, assisted by my colleagues, Drs. Goldsac and Paladini, and my invaluable soldier-nurse, I opened the abdomen by an incision reaching from the upper margin of the tumor about three inches above the umbilicus to the symphysis pubis. I found the omentum adherent right across the tumor, in some places so firmly that it could not be separated by the fingers, but had to be ligated and cut. I then endeavoured to lift the tumour out of the pelvis, but was unsuccessful, even with the help of a colleague's hand in the vagina; so, beginning on the right side, I tied and cut the broad ligament down to the uterine vessels, and then worked my way across between the uterus and bladder, pushing down the vesico-uterine peritoneum. I was now able to roll over the mass and then tied the uterine artery and cut through the cervix, leav-

ing the stump. The left side was much more easily dealt with, simply rolling up the mass and putting forceps upon the vessels until everything was clear. All the vessels were now secured and the cervix stitched in the method described by Kelly. Over all, the peritoneum was now stitched from one side of the pelvic brim to the other by a continuous catgut suture covering in everything. I then drew down the omentum and put two catgut stitches in it, thus fastening it over the line of the peritoneal suture (as recommended by Forgue and Reclus) to prevent possible adhesions between the intestine and line of suture, and also to act as an absorbent for any liquid which might collect in the pelvis. The abdominal wound was closed without drainage in three layers, catgut being used for the peritoneum, wire for the muscle, and silkworm gut for the skin. The operation was finished in one hour and twenty minutes, much of this time being spent in freeing the adhesions of the omentum.

While turning out the tumour I had noticed that at one spot on the posterior surface it was quite soft, and thought at once of cystic degeneration. What was my surprise, however, on opening the mass, to find a placenta, dry and hard, and a little dried-up foetus, flattened out by pressure, measuring about five inches in length. On separating the uterus from the tumour it was seen that the ectopic gestation had taken place on the right side. On looking back over the history of the case now, I see that I might have suspected such an explanation of the symptoms, but the hardness of the tumour and its position nearly in the middle line filling up the pelvis, pointed rather to the presence of a myoma of the uterus.

The woman made an uninterrupted recovery, the dressings not being touched until the eighteenth day, when the stitches were removed, and she left for the country on the 32nd day after the operation in perfect health.

A word or two about the technique in antiseptics. Permanganate of potash and oxalic acid are used, after a thorough scrubbing, for disinfection of the hands: all instruments are boiled for at least ten minutes in alkaline water (carbonate of soda): catgut is sterilized by boiling in alcohol under pressure: sponges are prepared after Kelly's method: silk, silver wire and silkworm gut are simply boiled with the instruments, as however, repeated boiling in the alkaline water weakens silk and silkworm gut, only sufficient for the operation in hand is put in. For ordinary work sterile normal saline solution is used for both instruments and washing out cavities. I, following Dr. O'Connor, have given up the use of iodoform. Pieric acid, 3 to 5 grams to the litre of water, has taken its place and, I believe, to advantage. Strips of gauze

soaked in this solution are used for packing suppurating cavities or applying to dirty wounds. The site of operation is prepared by scrubbing with soap and hot water, followed by a thorough rubbing with alcohol, and, if time permits, carbolic or sublimate fomentations are applied. Permanganate and oxalic acid complete the process. The secret of success is surgical cleanliness.

(To be continued.)

TUBERCULOSIS OF THE FLAT BONES OF THE SKULL.
PERFORATION OF THE PARIETAL BONE, WITH EXPOSURE OF THE
DURA MATER.

BY

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of Toronto.

Tuberculosis of the bones of the skull is sufficiently rare to make the report of a case interesting, more particularly when the seat of the trouble is in the cranial vault. The facial bones are much more frequently affected than those of the cranium. Thus, I had under my care recently a lad who had a tuberculous caries of the malar bone ; this patient had tuberculous trouble elsewhere, the ankle joint having been excised for disease of the tarsus and tibia. Cnopf, of Munich, reports a case of spontaneous fracture of the inferior maxilla due to tuberculous caries in a child a year and a half old.* This was a debilitated infant who had, in addition to the trouble in the jaw, a tuberculous left elbow and similar disease in the right wrist. There was also found, after death, tuberculous disease of the lungs and of the abdominal organs. Cheesy matter containing tubercle bacilli was found at the seat of fracture in the jaw.

A patient, who presented conditions of unusual interest, was admitted under my care in St. Michael's Hospital in January, 1897. He was an Italian fruit-vendor, 21 years of age. He had always enjoyed good health until four months before coming under my care. His illness began at the period indicated, when he came to the hospital with trouble in the left side of the chest. He had a cough with a considerable amount of expectoration containing a good deal of blood. Dr. Dwyer informed me that he considered he had a tuberculous deposit in the left lung. He recovered sufficiently to leave the hospital, but was re-admitted a short time after with a return of the lung trouble and complaining of pain in the left hip, thigh and ankle. The ankle became very painful and a small abscess was opened over the external malleolus which did not heal but continued to discharge pus. I scraped away the pulpy material which had formed about the sinus and found that it led down to eroded bone. I made a careful microscopic examination of this material and found that it was tuberculous. After this operation a large number of foci of tuberculous disease developed, always with abscess formation and

* Quoted in Sajous Annual of the Medical Sciences, 1892, Vol. 3, pt. 2.

usually communicating with bone. Thus, in July, '97, I operated upon seven different localities. These were :—the dorsum of the right foot; an abscess over the left patella; inner malleolus of right foot; dorsum of left foot; anterior aspect of right wrist; the scalp over the left parietal bone; and the anterior region of the right leg. The abscesses, when opened at the time of operation, were found to contain thin pus which proved to be sterile. The condition of the patella consisted of a perforation large enough to admit the tip of one's fore-finger. The pulpy material found in the cavities and the lining walls of the abscesses in the various localities was examined and was found under the microscope to present the typical appearance of tubercle. The abscess in the scalp was found to communicate with disease in the parietal bone. There was a perforation about 2 cm. in diameter passing through the entire thickness of the bone and laying bare the dura mater covered only by some granulation tissue. The site of the perforation in the parietal was about 2 cm. behind the external auditory meatus and 6 cm. below the sagittal suture. Subsequently, the patient had other abscesses form; thus one formed in the cellular tissue on the right side of the neck, another on the outer border of the right fore-arm, and on the 20th October, '97, the patient had no less than seventeen abscesses or sinuses. These were in all stages of healing,—for one noted the fact that they tended to heal after a time: thus the wound in the scalp closed about six months after operation, and the left knee became ankylosed, but a discharging sinus persisted. Early in the autumn of 1898 he developed a very persistent diarrhœa and on October 10th, '98, he died, two years after the date of the beginning of his illness.

The condition presenting itself in this patient is interesting from two points of view. First, the large number of foci of tuberculous disease; and secondly, the fact that here we have an example of perforative tuberculous caries of the parietal bone. It is a noteworthy fact that the disease was chiefly confined to the skeletal parts and the viscera escaped. In spite of the fact that the disease made such havoc elsewhere, the focus in the lung seemed to heal, as the chest disease did not seem to make any progress after the first few months of his illness. The lung, too, was not alone in exhibiting this tendency to heal, as many other foci did likewise.

Perforation of the flat bones of the skull from tuberculous caries is extremely rare. I can find very little reference to it in the literature. Mr. Watson Cheyne refers to it as a rare affection, although he has observed two cases. One of these cases occurred in the occipital bone.* He believes that in most cases the trouble begins in the diplœe. Where perforation occurs, the dura may be separated from the bone by the

* W. Watson Cheyne, "Tuberculous Disease of Bones and Joints," 1895.

development of tuberculous material undergoing caseation. He also alludes to the fact that the affection apparently only occurs in the course of very severe tuberculous bone disease, an observation the correctness of which is borne out by the wide-spread development of the lesions in my case. It is said to appear also, as a rule, after other bones have been involved and not as the primary lesion.

The disease as thus affecting the flat bones of the skull is apt to be confounded with syphilis. In fact it has been said that formerly the disease was mistaken for syphilis. The existence of tuberculous disease elsewhere in the body and the development of a chronic abscess, however, are conditions which aid us in forming an opinion as to the real condition of affairs.

The ravages of syphilis in similar situations are well known. Thus Jonathan Hutchison, Jr., reports a case where a gummatous deposit involved nearly the whole of the occipital lobe of the brain and caused a perforation of the skull two inches by one inch in diameter, through which the brain membranes protruded and formed a tumor under the thinned-out scalp. There was no abscess formation.*

Whilst speaking of the rarity of tuberculous disease of the bones of the skull, it is understood that I exclude the tuberculous disease which is found as a sequel to middle ear disease of tuberculous character. An interesting point for discussion, however, regarding the origin of tuberculous middle ear disease may be raised. The usual teaching is that the disease spreads from the pharynx along the Eustachian tube, and from this source the middle and internal ear may be affected. Whilst admitting the possibility of this mode of infection, it is held by Barnick† that the disease may begin in the spongy tissue of the temporal bone and thus affect the mucous membrane secondarily. The fact that the disease spreads so rapidly, however, as to affect the mucous membrane almost immediately would make it extremely difficult to demonstrate primary tuberculous affection of the spongy tissue of the temporal bone.

* J. Hutchison, Jr.—*Trans. Pathological Society, London*, Vol. XLII., 1861, p. 254.

† *Ergebnisse der Allgemeinen Pathologie und Pathologischen Anatomie des Menschen und der Tiere*, Lubarsch und Ostertag., 1886, 3-2, p. 697.

HÆMATEMESIS SUCCESSFULLY TREATED BY OPERATION.

BY

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I have another case of arrest of hæmorrhage from a gastric ulcer to report.

The patient, an unmarried woman, 46 years of age, while in church on Sunday evening, the eighth of October, vomited a large quantity of blood. The quantity vomited was estimated at a pint; this, however, included stomach contents, and it is difficult to estimate with any degree of accuracy the proportion of blood in the vomit. I believe, however, that it was considerable, as she fainted and was removed from the church and sent home in a cab. Dr. J. A. Springle, who saw her soon afterwards, had her transferred to the Montreal General Hospital.

The woman gave a history of having suffered from indigestion for eight or ten years, and she tells me that nine years ago I, myself, told her that she had an ulcer in her stomach. At that time she says that she vomited a small quantity of blood. Since February last she has suffered from severe pain in the right epigastric region and vomiting. The pain radiated round to the back, was sometimes of a dull gnawing character, and at other times very severe. It was generally most severe two or three hours after taking food, and was relieved by pressure. Vomiting, also, occurred about two hours after eating. These symptoms were by no means constant. Several days might elapse without either pain or vomiting, especially if she was careful in her diet and took considerable rest.

When admitted to the hospital, she complained only of great weakness and no pain or nausea. Her muscles were hard and well developed, skin very dry and harsh, mucous membranes pale, and eyes dull. Her temperature was 98.2° F., her pulse 96, small and compressible, and her respirations 24. Her tongue was dry and she complained of great thirst. The abdomen was soft, not tender, easily palpable, and no tender spot in the region of the stomach could be detected. The right kidney was large and moveable. She was given morphia, gr. $\frac{1}{8}$, hypodermically, and an ice bag laid over the stomach; all food by the mouth was forbidden, and rectal feeding at regular intervals ordered. She remained in bed, resting quietly and sleeping well, until Wednesday evening, the eleventh of October, when at 10.45 p.m. she complained of nausea and almost immediately afterwards vomited twelve to four-

teen ounces of blood, partly in coffee grounds and partly in larger clots. Dr. Lynch, my resident house surgeon, gave her morphia, gr. 4, hypodermically, and reapplied the ice bag which had been discontinued, and introduced one pint of sterilized salt solution under the skin of the chest. At 1.15 a.m. on the 12th, she vomited two to four ounces of blood and became quite collapsed. Her pulse was 116 and her temperature fell to 96° F. She was blanched and cold. The subcutaneous salines were repeated, $\frac{1}{2}$ grain of morphia injected, and the foot of the bed raised.

By 11 a.m. she had recovered from the immediate effects of the hæmorrhage, and I decided that my only chance of saving her life was to operate at once as it was not at all likely that a vessel large enough to allow of the escape of so much blood would be closed by medicinal agents. Accordingly, after the intravenous injection of thirty-five ounces of sterilized salt solution, I made an incision in the median line and brought up the stomach into view. I was rather under the impression that the ulcer might be duodenal. This view was favoured by two facts: first, that the pain had not usually been felt for two or three hours after eating; and secondly, that she had told us, that on the Sunday morning before her illness, she had passed a black tarry stool. I therefore made an incision through the anterior wall of the pylorus, thus exposing at once the upper end of the duodenum and lower end of the stomach. The duodenum was found normal in every respect, but on passing my finger into the stomach, I at once felt a deep, excavated, round ulcer about half an inch in diameter. On turning out this portion of the stomach the ulcer came readily into view. It was situated on the lesser curvature, about 2 in. from the pylorus. No large open vessel could be seen, but blood flowed freely from several points around the margin. The ulcer was excised, the incision continued into the first, and the opening closed as in a pyloroplasty (Heineke-Mikulicz). The woman is making a good recovery. It is now three weeks since the operation, and she is taking considerable quantities of food by the mouth without any pain or nausea; her bowels move regularly and she is gaining in strength, weight and colour. Ten days ago she laughed so heartily that she sustained a double dislocation of the mandible. This was reduced without any anæsthetic, but unfortunately the necessary bandages interfere somewhat with her feeding.

ENDO-ENTERIC SUTURE.

BY

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The urgent need of some trustworthy method of endo-enteric suture has been fully recognised for many years. Many methods have been devised, but that of Dr. F. G. Connell, described in the Philadelphia Monthly Medical Journal, is the only one which is wholly within the intestine. Maunsell's, Halstead's, and Chealle's operations require two systems of suture, one within the intestine to unite the resected ends of the gut, and another superficial row to close the longitudinal incision of the intestine. All such combinations must produce a constriction, not only in the transverse, but also in the longitudinal axis, and must involve a greater or less risk of intestinal stenosis.

The slightest risk in any such operation is very objectionable, and it can be avoided by resecting the intestine very obliquely and inserting the sutures close to the margins of the incised gut. This operation is less complicated, requires less time, and dispenses with the necessity of making a longitudinal incision in the intestine ; and it must be admitted that any method which diminishes the lesion, increases the chances of recovery.

In a series of over 100 experiments on dogs, the Connell suture was used in :—Enterorrhaphy, in 24 cases ; pylorectomy, in 11 cases ; gastro-enterostomy, in 14 cases ; pyloroplasty, in 2 cases ; and cholecystenterostomy, in 8 cases. The mortality was 19 cases, divided as follows :—Hæmorrhage, 1 ; volvulus, 1 ; chloroform narcosis and shock (gunshot injury), 2 ; invagination of pyloric extremity of stomach in pylorectomy, 1 ; gangrene of omentum, mesenteric artery ligated too high, 1 ; gangrene of gall-bladder in cholecystenterostomy from excessive force required to bring it to the surface, 1 ; no ascertainable cause, 1 ; and sepsis, 10.

In no case could death be attributed to the method employed, specimens showing limited adhesions ; and union was perfect except in one case.

The technique was modified by using *two* suspending loops instead of three, and using a slender, blunt pointed, perineum needle or needle with patent eye for drawing the suture through before tying.

The excessive mortality from sepsis is greatly to be regretted, but time was limited, the rooms were very much overcrowded, as many as twenty-five dogs being kept in the operating room after operation, and necropsies were performed in the same room. Often, when beginning an

operation on the stomach, it was found filled with masses of partly digested bone, and this was one of the principal causes of infecting the peritoneum while cleaning out the stomach.

The operation is comparatively rapid, e.g. :—

No. XCIX.—Brindle, black and tan terrier, male, 12. Abdominal incision was begun at 12.53 p.m. ; peritoneum opened, intestine withdrawn, clamped, resected and arteries ligated. Suture of intestine begun at 12.56½ ; suture completed and knot tied at 1.00 ; abdominal incision closed and sutures cut off at 1.02 p.m. Recovery. Whole time of suture, 3½ minutes.

A series of one hundred enterorrhaphies could be performed without a death, and this suture is certainly worthy of a more extended trial though it may never replace Murphy's button, bobbins, cones, etc.

Murphy's button gave a proportionate number of failures, and in pups could not always be used in consequence of the extreme friability of the intestine—the intestinal walls being crushed to a pulp in the effort to close the button with the aid of a gauze compress. In these cases the button was removed and the suture used with success. Brentano's statistics for Murphy's button—48 deaths in 169 cases (Berlin Klin. Woch. 1896, xxxiii., p. 443) indicate (1) imperfect technique, (2) excessive temerity in its use, (3) defective button, and (4) its use in unsuitable cases.

Sutures are always applicable and technique should not be defective. In two cases I have seen very undesirable effects from the use of buttons. In one, gastrojejunostomy, it was necessary to use a Lembert suture around the button because the folding of the thick gastric wall prevented its complete closure. This folding could have been prevented by excising from the wall of the stomach and jejunum a circular piece about the size of the "collar" in the middle of the usual incision.

The diagrams on the following page will fully explain the suture.

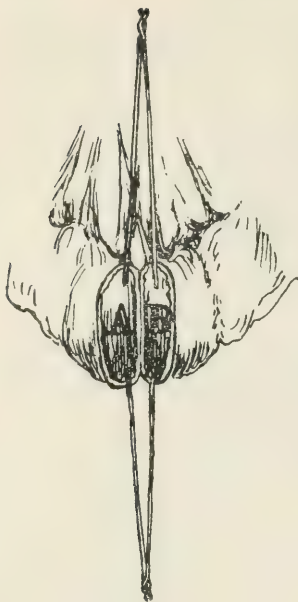
No. I.—Two suspending loops in the ends of the gut A and B.

No. II.—Suture inserted and knot tied to anchor it. Free end of suture held by forceps, and needle inserted for the continuation of the suture.

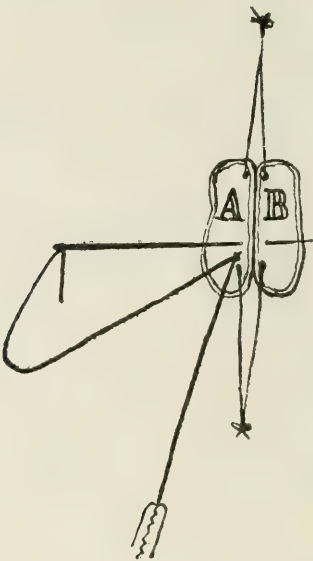
No. III.—Suture between the suspending loops completed : suspending loops knotted, cut away, and back stitch in the needle.

No. IV.—(Second stage of suture.) Needle pierces intestinal wall A from within, out, crosses to end B, and pierces intestinal wall, from without, in, and immediately from within, out ; then crosses to A, pierces from without, in, and immediately from within, out ; and so on until the suture is nearly completed, as in IV.

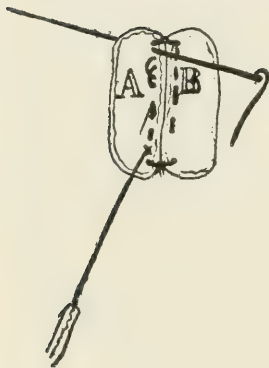
No. V.—Suture tightened and margins of the gut inverted by it. Last stitch inserted, and needle piercing and passing into the intestine where the suture was commenced.



I.



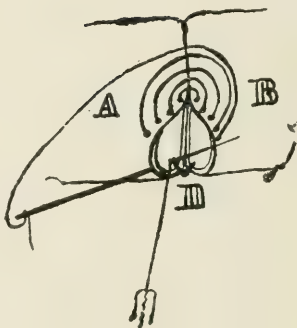
II.



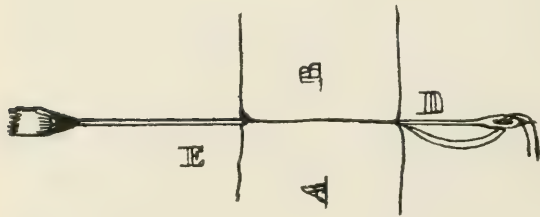
III.



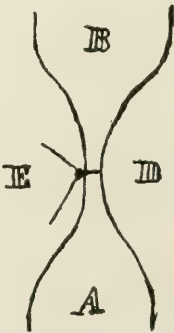
IV.



V.



VI.



VII.

No. VI.—Perineum needle (blunt pointed) passed between stitches of the opposite side to come out at D of No. V. The ends of the sutures are drawn out at E, the intestine is then flattened as in VII., the threads drawn firm, knots tied, and the ends cut close, when the ends of the suture disappear within the intestine.

The following advantages may be claimed for this suture :—

- (1) Rapidity—three and a half minutes for anastomosis.
- (2) Simplicity—no special instruments and few needles being required.
- (3) Only one line of union, that the shortest possible.
- (4) Less injury to the intestine : as no longitudinal incision is required.
- (5) All intestinal walls included and strength is the greatest attainable.
- (6) It is endo-enteric.

Case Reports.

TWO CASES OF EPHEMERAL MANIA, UNCOMPLICATED WITH EPILEPSY, INTEMPERANCE OR PARTURITION.

BY

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It may not be quite void of interest to some of the readers of the "Journal" to record two cases of a form of mental disorder, which, in my experience, has been rare. So much so, in fact, that they constitute the only ones, of this exact type, that I have encountered during twenty-five years of attendance upon the insane. Singularly enough, too, they occurred within a fortnight of each other, in the summer of 1897.

The cases to which I allude would fall under the class of mania styled, by Dr. Clouston, ephemeral mania or *mania transitoria*, and defined by him as a somewhat rare form of mental exaltation, coming on suddenly ; usually sharp in its character ; accompanied by incoherence, partial or complete unconsciousness of familiar surroundings, and sleeplessness ; and lasting from an hour up to a few days.

Of the two terms used by Dr. Clouston, I consider the name ephemeral mania decidedly the preferable one, because that of *mania transitoria* is sometimes used as a synonym for transitory frenzy (*furor transitorius*), more rarely, for acute delirious mania, from both of which disorders ephemeral mania is distinct, lacking the blind desire of destruction characteristic of the former, the typhoid symptoms peculiar to the latter.

While attacks of transient insanity in connection with epilepsy in some of its forms, child-birth, and the use of alcohol are by no means rare, the cases to which I would call attention had their origin in none of these conditions, and may therefore prove of some interest. They were, practically, cases of ordinary acute mania distinguished by and peculiar only by reason of their extremely short duration, a fact which, under certain conditions, might become of paramount importance in a medico-legal aspect.

Case I.—J. S., a married woman, aged forty, was admitted to Verdun hospital on July 18th, 1897. The history as furnished was that she had been a passenger from St. Johns, Newfoundland, to Owen Sound, Ontario, whither she was proceeding to join her husband, who had left the Island some months previously, and had arrived in Montreal, *en route*, during the morning of the day on which she was placed under my care. On reaching the city, where she had some hours to wait for a connecting train, she had asked the station-master where she could get

some breakfast, and had been directed by him to a respectable restaurant near by. There was at this time, as far as I can ascertain, nothing peculiar about her in either appearance, manner, or conversation. On entering the restaurant, she was asked by the proprietor if she would not remove her bonnet and shawl while eating. This seemed to frighten her, and leaving hurriedly, she wandered aimlessly about the streets for several hours. About 2 p.m., she reached Westmount, one of the suburbs of the city, and stopping at a private residence there asked for a drink of water, coupling her request with one to be allowed to sit down and rest. Having been given a drink and some luncheon by the lady of the house, to whom she told her story quite coherently, she asked her newly-made friend if she could suggest a stopping place where she might remain until her train should leave. A charitable institution, St. George's Home, was suggested, and arrangements made for her conveyance thither. The matron of the home, who welcomed her and at once set about making her comfortable, stated that she seemed extremely nervous and fidgety, but otherwise perfectly well. About six o'clock, she suddenly jumped from a sofa on which she had been lying, and with a piercing scream sprang toward a window and endeavoured to throw herself therefrom, but was prevented by the matron, who chanced to be standing by. This action was followed by undoubted signs of insanity, and she soon became so noisy and excited that the police were notified. She was taken to the police station in a raving condition, screaming incoherently at the top of her voice, and there it was found necessary to put her in a straight-jacket to prevent her doing herself bodily harm. I was communicated with by telephone, and she was brought to the hospital, about midnight, in charge of three policemen.

I found her to be a stout, well-nourished woman, with a wild, hunted look, who kept up a constant babble of incoherent talk, and from whom it was impossible to gain the slightest information concerning herself. Pulse and temperature normal. She was at once put to bed and left in charge of two nurses, but no sedative was given, inasmuch as I had been told by one of the policemen that their surgeon had given her a sleeping draught of some kind just before they left the station. She dozed at intervals during the night, but most of the time was noisy, throwing herself about on the bed, and trying to slap and scratch the nurses in charge of her. In the morning she was given a hot bath, and was much quieter, though sleepless, for some hours after. She took but little nourishment, being seemingly afraid to drink the milk offered her, but ate a soda biscuit. Gradually the condition of excitement returned, and there was an incessant, incoherent chatter with constant efforts to get out of bed. She finally became so restless, and made such persistent efforts to injure herself, pulling her hair and trying to strike her head against the wall, that, about 3 p.m., I gave her $\frac{1}{75}$ of a grain of hyoscine

hydrobromate, hypodermically. Very soon after its administration she fell asleep, and slept up to 9 p.m., when she awoke, much quieter, though still restless, apparently frightened, and incapable of coherent conversation. This condition continued during the night, and up to the arrival of her husband, who had been telegraphed for, about 8 a.m. She was delighted to see him, and at once lost much of her frightened look and manner; talked quite rationally to him, ate a hearty breakfast, and soon after got up, dressed herself, and went for a walk around the grounds with him.

In the course of a long conversation with her, I could detect not the slightest sign of any mental obliquity remaining, but found her apparently completely rational, the entire duration of the insanity, dated from the time of her quitting the restaurant, having been less than forty-eight hours. She told me she did not know what had brought on the attack, of which she had never had one before, except that for some reason, she herself could not tell what, she felt frightened of the people where she had gone for breakfast. She had a vague recollection of what she had done between the time of leaving the restaurant and her arrival at St. George's Home, but none whatever of anything that had happened between the moment of her outbreak there and that morning, when she could recall seeing the nurses sitting by her bedside, and wondered where she was. She left for her home at Owen Sound on the afternoon of the same day, and over a year later, my last account of her, had had no recurrence.

By the closest questioning of the husband I could glean no evidence of any epileptic condition, masked or otherwise, nor history of heredity other than that a maternal aunt had died insane. Her habits of life had always been of the best, and she had never displayed any tendency to hysteria or other neurotic disorder,—on the contrary, she had always been looked upon as a particularly healthy, strong-minded woman.

As regards causation, I can but suppose that the excitement of travel to one totally unaccustomed thereto (she had never been on a railway train before), combined with the fatigue incident to such a long journey, had been sufficient to upset the mental equilibrium.

Case II.—Here I was called in consultation by a brother practitioner to see a young girl, M.T., aged nineteen. She had gone out walking in the morning, and while crossing the street had been nearly run over by a street-car, but had received no injury, and had continued her promenade, doing some shopping, and returned home apparently as well as when she started out. About three hours after, while chatting quietly to one of her sisters, she had suddenly become incoherent in speech, began to walk restlessly about the room, played the piano violently, mixing up snatches of airs in the most incongruous manner possible, and used very profane language. Put to bed, she talked and rolled about,

shouting and singing at the top of her voice. Her friends in vain tried to soothe her, she did not recognize any of them, and her incessant conversation was a jargon of fleeting, disconnected delusions.

When seen by me in the evening, about six hours after the commencement of the attack, I found her to be a stout, well-nourished girl, with what in health must have been a pleasant and intelligent countenance. The pulse was very slightly accelerated, but the temperature was normal, and the tongue clean. She had a wildly excited appearance, refused food and medicine, and very restless, endeavouring to pull off her night dress, rolling about the bed, and constantly trying to get up, but not at all inclined to be violent. She kept up a loud, continual, incoherent chatter, repeating over and over again in a meaningless way anything said by those about her. At times, from her actions, there were evidently both visual and auditory hallucinations of a terrifying character. The patient had enjoyed the best of health up to date, with great fondness for outdoor sports and exercise. No similar attacks had ever occurred, and the closest questioning of her friends could elicit no evidence of epileptiform seizures of any kind. Her habits of life had been good, and there had been no tendency to hysteria or other neurotic disease of any kind. There was, however, a strong hereditary predisposition to insanity, her maternal grandmother having had two attacks of melancholia, while an aunt, also on the mother's side, had been an inmate of an asylum for some years. No exciting cause other than the fright she had had could be imagined.

After advising the application of cold to the head and the administration of a hypodermic of $\frac{1}{100}$ of a grain of hyoscine hydrobromate, I left, promising to send the necessary papers for her admission to the hospital as soon as possible. This I did, but was astonished to receive, about noon the next day, a telephonic message from my confrere that he trusted there would be no need to use them, as the patient was seemingly quite recovered. On receiving the hypodermic, about 9 p.m., she had quieted down, and slept from 10 to 2. She then awoke, and though still restless and talkative, was decidedly less so than when she had fallen asleep. She recognized those about her, and wondered at the presence of a stranger, her nurse. After partaking of a bowl of bread and milk, she fell asleep again, and remained so up to 7 a.m. On again awaking, some slight confusion of intellect with motor restlessness was still apparent, but this gradually passed off, and by noon, as already stated, she was quite well again, nor has there since been any recurrence.

The total duration of the attack in this case was only about twenty-two hours, namely, from 2 p.m. of the one day to mid-day following. Here, too, there was no recollection of anything that had occurred from the time of the seizure up to nearly the period of complete recovery, while the causative agency could only be ascribed to the shock of a sudden fright acting upon a strongly neurotic diathesis.

A CASE OF LUES VENEREA WITH AN UNUSUALLY PROTRACTED INCUBATION PERIOD.

BY

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Perhaps one of the most important points to be considered in the differential diagnosis of suspicious lesions situated on the external genitalia is the incubation period, the time elapsing after doubtful or other coitus until the sore appears. The longest incubation periods noted by some of the most prominent syphilographers are as follows :—

Keyes (*Genito-Urinary Diseases and Syphilis*), ten weeks ; Bumstead and Taylor's text-book, fifty days ; Fournier, seventy days ; and White and Martin's text-book, three months.

As, judging from the literature on this subject, the possibility of the incubation of lues being lengthened by a coincident gonorrhœal urethritis is not often considered, the following notes of a case presenting an unusually long incubation period may be of interest.

The patient, a lad, 22 years of age, had coitus with a woman of doubtful history about the beginning of October last, and has not had other coitus since. This statement there is no reason to doubt. About November 1st he presented himself complaining of a urethral discharge and most of the "inflammatory symptoms" which usually accompany a gonococcal urethritis. It had lasted three weeks.

Examination showed a profuse purulent discharge exuding from an inflamed meatus, but nothing suggestive of any lesions other than those due to gonorrhœa. The "two glass test" showed that the posterior as well as the anterior urethra was markedly affected, in fact, the case was an unusually severe one of gonorrhœal urethritis. Numerous gonococci were detected on microscopic examination.

The patient was warned that although by copious hot irrigations his worrying inflammatory symptoms and even the discharge could soon be conquered, yet, owing to the length of time which had elapsed from his first symptom to the beginning of treatment, the disease would be peculiarly resistant ; and it was not until January 15th that treatment could be discontinued.

On January 31st, the patient returned complaining that three small sores had appeared on his penis, two on the glans and one on the preputial mucosa. Examination showed three discrete ulcerations giving off a profuse, serous discharge. The edges of these sores were not indu-

rated and their appearance suggested nothing graver than herpes complicated with a slight pyogenic infection of the ulcerated surfaces. The lymphatic glands of both groins were slightly enlarged. Later, the two ulcers situated on the glans coalesced. On February 2nd a similar condition was noted.

The patient did not report again until March 7th, having been absent on a vacation, during which he had been a little troubled with pain and tenderness at first but later the preputial sore had disappeared and that on the glans was drying up. An examination was made and the ulcer, now decreased in diameter to about half a centimetre, had suspiciously hard edges and was extremely tender on manipulation. A few days later, when again seen, the abraded surface was about double its previous size and induration was more marked. On March 15th, a slight mottling was noticeable on the sides of the thorax and upper abdomen; the cervical, epitrochlear and inguinal glands were distinctly palpable; and the fauces were injected. On this date he was put on antisyphilitic treatment.

The long incubation in this case was most puzzling, and until the constitutional symptoms appeared it was impossible to state positively that the penile sore was a chancre. When discussing this case with Dr. James Bell he mentioned having seen, some years ago, a very similar one, and suggested that when syphilis and gonorrhœa are contracted from the same source and at the same time, the incubation of the former disease may be so lengthened that it does not appear until the cessation of the urethral discharge.

Although the theory of the modification of the course of these diseases by their coincidence is rarely mentioned in the literature on lues, it is not altogether new. It would be interesting to observe a series of these cases, as the course of the urethritis as well as that of the lues seems to be remarkably altered. Dr. Swinburne, of New York, and others, have noticed that specific urethritis under these conditions is often extremely resistant to treatment. The history of this case would show that all penile abrasions appearing both with and after urethral discharges should be watched with more than ordinary care; and the observation of Dr. Swinburne certainly indicates the advisability of giving a most guarded prognosis in the class of cases mentioned by him.

A RARE SURGICAL CASE.

BY

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Diego —, aged 28, a labourer on the coffee estate of Sr. Pinto, gave the following history. Two years previously, while loading a mule, the animal kicked him on the buttocks, occasioning considerable pain and some swelling, from which he apparently quickly recovered, but shortly afterwards he noticed that stooping in certain positions and sitting in a certain way on a hard surface, caused him pain. A little later he felt a small lump, about the size of a robin's egg, and painless except when roughly handled, and recognised it as the cause of his pain. The lump did not grow, nor did it interfere with his occupation as a labourer and muleteer for over eighteen months, till one day, on lifting from the ground a heavy load, he felt something give way in the lump, which at once became painful and began to swell ; subsequently the adjacent parts showed signs of inflammation. The pain became so intense that he was obliged to go to bed and from that time it prevented him doing any work. Shortly after this he came to the hospital of San Juan de Dios in San José, where a diagnosis of aneurism was made by Dr. Duran and the late Dr. Hine.

He objected to an operation, so he was placed upon low diet, rest, and potassium iodide, with the result that the further growth of the tumour while in the hospital was prevented. Tired of a treatment which did not cure, he left the hospital, and after some time was recommended to my confrère, who thought he had discovered a cold abscess, poulticed assiduously, gave morphine to relieve the throbbing pain, and on Christmas eve plunged his lancet boldly into the supposed abscess and saw the blood literally spurt to the ceiling.

I was called immediately, and found the patient in the following condition :—

He was emaciated, with a rapid, weak pulse, lying prone, the only position he had been able to occupy for some weeks. A tumour, some six or seven inches in length, by five in width, and three in height, occupied the right buttock and pulsated visibly. No doubt could be entertained by the merest tyro that here was an immense aneurism, but whether of the ischiatic or gluteal artery it was impossible to decide. Pressure had stopped the hæmorrhage, but to ensure that no further bleeding would occur during the night we passed a stout curved needle through the walls across the puncture and tied tightly a figure of eight

ligature ; restoratives were given and daylight was awaited for so formidable an undertaking.

We had our choice of two operations, either cutting down directly on the aneurism or placing a ligature round the internal iliac artery. After carefully considering the matter, I decided to ligate by preference in the gluteal region, for the following reasons :—the aneurism was caused by direct violence, from the patient's age and previous good health there was no reason to suspect any disease of the arterial coats, and an incision had already been made into the tumour. Still, after anaesthetizing the patient and forcing my hand into the rectum, I was resolved, if any tumour should be felt, to tie the internal iliac, as I was convinced that unless immediate action was taken, the patient was irretrievably lost.

Chloroform was administered and a careful examination was made by the hand in the rectum, but as no tumour was discovered, I proceeded to operate by cutting directly down upon the sac. An incision was made in the direction of the longest diameter of the tumour from the posterior superior spinous process of the ilium to the great trochanter. The fibres of the gluteus maximus were separated; some fascia, probably of the gluteus medius, was divided on the director; below this was the lobulated sac of the aneurism. Following the sac carefully to the main vessel, I found this so short that I could not conveniently pass a ligature around it. I then decided to dissect the distal part of the aneurism, tie the artery or arteries with two ligatures, cut between these, and thus give myself an opportunity of passing a ligature under the sac of the aneurism, carrying it along the artery to its exit from the pelvis, and ligating there. The dissection proved that the aneurism had dilated its trifurcation; the three branches were widely separated from each other and sprang from the aneurism independently. I tied them each close to the aneurism and also at a distance of about three-quarters of an inch, and cut between the ligatures. This allowed me to pass my ligature under the aneurism. I next passed my hand under the sac to raise it up so as to place my ligature on the main artery, and while raising gently my finger to separate the tumour from the surrounding cellular tissues, the sac ruptured on its under surface. I immediately thrust my finger into it, and arrested the hemorrhage by pressing upon the artery at its emergence from the foramen; afterwards, by first applying a spring forceps, I was able to place a ligature on the artery. The coats of the artery were greatly thickened; where it emerged from the pelvis they were about twelve mm. in thickness, and probably the degeneration extended to its origin from the common iliac, although we had not been able to detect it in our examination per rectum, made before commencing the operation.

The operation was very tedious; several times had the pressure forceps to be applied to numerous small muscular branches, which were afterwards ligated. From these the patient lost considerable blood, but

from the main artery the loss beyond what was contained in the aneurismal sac was slight. He died from collapse four hours after the operation.

Had he survived this he would, from the state of the vessel, surely have died very shortly from secondary hæmorrhage. Had we not operated the aneurism would have burst before very long, as its walls were quite thin and sacculated in several places, particularly where Dr. X made the puncture. Had it not been punctured I would not have advised an operation which, with the exception of an unusually complicated ovariectomy, was the most tedious and difficult I have ever seen performed.

The aneurism was just at the trifurcation of the gluteal artery, the three main branches arising from the sac of the tumour ; or perhaps, I should say, the aneurism was formed of all the artery between its exit from the pelvis and its division. The three divisions were much thickened where we divided them at about one quarter inch from the sac.

RETROSPECT OF CURRENT LITERATURE.

Medicine.

UNDER THE CHARGE OF JAMES STEWART.

Athletics and Circulatory Diseases.

ALFRED STENGEL, M.D. "The Immediate and Remote Effects of Athletics upon the Heart and Circulation."—*Amer. Jour. Med. Sciences*, November, 1899.

This paper is the outcome of a number of observations on young men in training for athletics, with particular reference to the heart, before and after exercise. Stengel draws a comparison of the effects of violent exercise on the *trained* and *untrained*. In the latter, percussion and auscultatory-percussion show decided increase in the area of dulness of the right, as well as of the left, heart after excessive effort, together with the development of apex murmur, thrill, and pulmonary accentuation. In a well-trained individual, enlargement of the right heart is slight or absent after violent exercise, but a pulmonary murmur, without accentuation of the sound, may develop.

Although the significance of the physical signs is not very fully discussed, it seems a fair inference that, in the untrained, dilatation of the ventricles with mitral regurgitation takes place. The writer regards a murmur at the pulmonary cartilage as extremely common in young boys, and believes it is due to a dilated conus arteriosus. Although some murmurs at the apex are probably due to mitral regurgitation, most are probably of cardio-pulmonary or intraventricular origin.

The writer draws the conclusions that overdistention of the heart is frequent in athletic contests and may cause harm, if the individual is in ill-health or badly trained; and secondly, that hypertrophy and symptoms of overaction sometimes result from continued athletics. As practical conclusions a rigid system of medical supervision of college athletics is suggested; and secondly, that young men be encouraged to continue some form of exercise after discontinuance of regular athletics.

WILLIAMS AND ARNOLD. "The Effects of Violent and Prolonged Exercise upon the Heart."—*Transactions Amer. Clim. Assoc.*, 1899.

The athletes competing in a road race of twenty-five miles were utilized by the writers, and observations made before and after the race. The age of the contestants was from 19 to 28 years. None used alcohol, and only three tobacco. During training a diet consisting of increased albuminoids and decreased carbohydrates was taken, and practice runs two or three times a week. It was found, with a single exception, that those who trained under two months were least successful in the race.

After the race, all the thirteen contestants were more or less exhausted, three were dazed and confused, one cyanotic, and one of an ashen color.

The pulse, after the race, was weak in all contestants, and in one intermittent. Its rate varied from 104 to 120, except in two instances, when it fell to 60 and 70, both instances being in the most exhausted men. The temperature after the race was from 2 to 5½ degrees lower than at the start, and there was a loss of weight of from 1¼ to 5½ pounds. The urine showed albumin and casts in *every* case, and occasionally blood corpuscles.

Physical examination after the race showed usually an increase of heart dulness to the left, weak heart sounds, and usually a murmur at the second left space, heard down towards the apex and, in some, in the axilla and back. Owing to the weak heart sounds no pulmonary accentuation could be distinguished. All the contestants had powerfully acting hearts, slightly increased in size, and strong pulses, before the race.

The writers regard the heart examination as proving a relative or muscular incompetence of the mitral valve. The lowered temperature and blood pressure are at variance with the usual text book statements. [In this connection it is probably necessary to distinguish between the fatigue of moderate exercise and the exhaustion produced by extreme effort.]

The writers regard long distance running, under suitable conditions and without the contest, as beneficial rather than otherwise. Even with the contest it may be regarded as far less injurious than other practices indulged in by exuberant young men.

The Congo Sleeping Sickness.

MANSON AND MOTT.—*Lancet*, Oct. 21, 1899.

Drs. Manson and Mott read interesting communications at the Lon-

don Pathological Society on the clinical and pathological features of two cases of this remarkable malady.

The disease is endemic, and limited to certain villages in the tropical part of the west coast of Africa. It has a remarkable latency amounting, according to native accounts, to as much as seven years. Manson himself knew of a Congo boy in whom the disease developed in England three years after leaving his native village.

The onset is very insidious, and only those familiar with the affection can recognize the early stages in gradually increasing mental languor and muscular weakness, a tendency to sleep, taciturnity of expression, and slowness of movement. The temperature is subnormal, with occasional feverishness. The second period of the disease is one of great drowsiness and prostration. The patients reply and eat, when roused, but sleep almost continuously if left alone. In the third stage, bed-sores and convulsions develop. The lymph glands present chronic adenitis, and sometimes there is an itchy papular eruption on the skin. Death is invariable, and may result from starvation, bed sores, convulsions, coma, hyperpyrexia, or intercurrent disease.

In both of Manson's cases entozoa were discovered, the filaria perstans in the mesentery in one case, and an embryo in the blood in the other. The writer considers an entozoal origin probable, and in harmony with the long period of incubation and non-communicability. The objection to this theory is the frequency with which the parasite is found in the blood of the natives.

Dr. Mott described morbid changes in the central nervous system consisting in a leptomeningitis and encephalo-myelitis. Throughout the whole nervous system, but especially in the medulla and base of the brain, the perivascular lymphatics were distended with mononuclear leucocytes.

F. G. Finley.

Surgery.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

Obstruction of the Bowels from Gauze Compress.

REHN. "Darmverstopfung durch eine Nullcompress."—*Archiv. f. Klinische Chirurg.*, Band 60, Heft 2.

It is a well-known fact that in a surgical operation an instrument, compress or drainage tube may be left behind. This often fatal occurrence happens most frequently during a laparotomy. Literature contains quite a number of such cases. Not infrequently a fatal peritonitis is the sequel; occasionally a gauze compress is passed per rectum.

In 1892, a patient, six and a half months after operation, passed in a stool a compress of gauze which had been overlooked and left behind; a week later the following interesting case occurred: A patient submitted to the operations for the removal of both ovaries at first, and later for the extirpation of the uterus. Four months after the last operation the patient suffered from severe abdominal pain and was unable to do any work. A well-defined, small tumor, the size of a mandarin, could be felt in the abdomen. There were symptoms of peritonitis and intestinal obstruction. There was no fever. The diagnosis was the formation of adhesions.

An exploratory incision was made and a bunch of intestines found matted together. While separating the adhesions the intestine was torn and a compress of iodoform gauze was found inside the gut. This was removed and an intestinal resection performed. The patient died six weeks later from chronic septic peritonitis.

Another case had the following history:—On the 13th of October, 1897, Miss G. was admitted to the hospital with an apparent diffuse peritonitis; at the same time a tumor about the size of a child's head could be felt in the left parametrium, which was apparently a pus tube. The operation for its removal was rendered difficult from the fact that she took the anæsthetic badly—the intestines were forced out by the patient's straining and the adhesions were so firm that a portion of the pus sack was left behind adherent to the sigmoid flexure. The abdomen was washed out with sterilized salt solution, the intestine returned, and an iodoform gauze tampon passed into Douglas' pouch. The peritonitis subsided and the gauze was removed on the eighth day. A few days later a fæcal fistula appeared. This soon closed, and the patient was discharged on the 9th of December, 1897, in excellent health. For four months she remained well, going about doing her work and had

nothing to complain of. Then stomach pain and cramps caused her to seek readmission to the hospital.

There could then be felt by pressure a tumor 10 cc., long, in the epigastric region. There seemed to be some obstruction in the bowels. It was supposed that some unfortunate adhesions had formed. After three days had passed without any stool or passing of flatus, an operation was decided upon. On the 18th of May, the patient being anesthetized, a tumor could be felt above the region of the cæcum. On opening the abdomen, a little bloody serum escaped. A coil of intestine was found bound together by adhesions, and in one part gangrene had begun. A portion of the upper part of the small intestine 40 cc. long was resected and an end to end anastomosis effected. The abdomen was closed and the patient is now in perfect health. On examining the piece of intestine removed a gauze compress was found occupying its lumen. How it got there is the question. It is supposed that during the original operation this compress became misplaced, was overlooked, and finally got into the bowel by ulceration. The only other supposition is that the gauze was swallowed.

Jalaguier and Manclaire introduced gauze into the abdomen of dogs. In one instance the dog was killed two months afterwards and the gauze found rolled up with the intestine and embedded in adhesions. In three cases, the gauze was found embedded in the wall of the intestine as a hard foreign body; and in one instance, in a pregnant dog, the gauze was found in the cavity of the uterus. In Rehn's opinion, gauze can only enter the intestine as a result of extremely strong inflammatory adhesions.

It is noticeable that in all these cases stress is laid upon the fact that the patient took the anæsthetic badly, was restless and strained a good deal, and that the intestines were forced out. This history is supposed to account for the misplacement and overlooking of the gauze. One cannot but think that if these gauzes had been carefully counted, and accounted for before the abdomen was closed, these unfortunate accidents would not have occurred.

Experiments in Introducing a Solution of Cocaine into the Spinal Cord.

BIER. "Veruche über Cocainisirung des Rückenmarkes."—*Deutsch Zeitschrift f. Chirurg., Band LI., Heft iii., u. iv.*

SELDOWITSCH. "Über Cocainisirung des Rückenmarkes nach Bier."—*Centrallblatt f. Chirurg., Oct. 14, 1899.*

The regional use of cocaine after the methods of Schleich and Oberst is well known and has circumscribed the use of general anæsthesia, but

is quite useless for large operations. Bier has tried to render large areas insensitive to pain by introducing cocaine into the spinal canal. Bier introduces a firm hypodermic needle, between the lumbar vertebræ, into the spinal canal, and then with a Pravaz syringe injects a sufficient quantity of cocaine solution, taking care to allow the least possible amount of cerebro-spinal fluid to escape. He leaves the needle *in situ* for two minutes, then withdraws it and seals the opening with collodion. His object in leaving the needle two minutes before withdrawing it is to prevent the cocaine passing out of the spinal canal through the inner needle hole into the tissues. The skin over the point of puncture may be anæsthetized by Scheleich's method. He is of the opinion that the cocaine introduced into the spinal canal is diffused in the cerebrospinal fluid, and that the anæsthesia is due to influence of the cocaine upon the nerves, and perhaps also upon the ganglia.

The first patient experimented upon was a labourer 35 years of age. He was hopelessly tubercular and had been frequently operated upon. He suffered from active disease in the ankle joint. He had frequently taken ether and dreaded to take it again. Bier proposed to him the use of cocaine injected into the spinal canal, and he assented to the proposition. His fever was high and he suffered a good deal from the ankle.

On the 16th of August, 1898, 3 cc. (50 minims) of a 0.5 per cent. cocaine solution was injected between the lumbar vertebræ into the spinal canal (in all about gr. $\frac{1}{4}$). Bier waited twenty minutes, and it was then found that feeling was lost in the lower half of the body; a prick or a cut was only felt as pressure. The astragalus was removed, the lower end of the tibia sawn off, and the synovial membrane dissected out. The patient moaned during the operation, but kept quiet, and afterwards declared that he had felt no pain, but only that someone had squeezed his sore foot. The pulse increased in frequency during the operation, but nothing else was noticed. Two hours after the operation the patient complained of a pain in the loins and leg. Later he vomited and suffered from a severe headache. The vomiting soon ceased, but the headache continued during the next day.

The second patient was a baker, 17 years of age, with an osteomyelitis necrosis of the tibia. An injection of 1 cc. (about 8 minims) of a 1 per cent. solution of cocaine was made, in all about 0.01 grammes of cocaine (about gr. $\frac{1}{4}$). In five minutes all sense of pain had disappeared, although the sense of touch remained. Six minutes after the injection the whole of the diaphysis was laid bare, the sequestra exposed by chiseling and removed. The patient had not the least sense of pain. Half an hour after the injection the lower part of the body was insensible to pain in front on the right side up to the eighth rib, on

the left side up to the fifth rib in the middle line, and behind on the right side up to the ninth and on the left side up to the eighth rib in the line of the scapula. A few minutes later the patient became excited, laughed and talked. The agitation lasted about five minutes. The pulse was 120, bounding, full and strong. He vomited a few times, and for two days suffered from severe headache.

The third patient, a 14-year-old boy, suffered from tubercular ankylosis of the left knee. The joint was flexed to a right angle. About $\frac{1}{4}$ grain of cocaine was injected as usual. The joint was resected and the ends of the bone secured with three nails. The boy was very much frightened and moaned, but apparently did not suffer any pain.

The fourth patient, a boy 11 years of age, had tubercular disease of the ischium. In seven minutes after the injection of about 1-8 grain of cocaine the bone was scraped and a portion sawn off, the only sensation the boy felt being a scratching feeling when the saw was used. Half an hour after the injection nearly the whole body except the head was insensible to pain. The pulse during the whole operation was strong and regular. This lad did not suffer from headache nor did he vomit.

In the fifth case, a complicated compound fracture of the lower end of the femur was treated ten days after the accident. The wound was opened up, collections of pus evacuated, the ends of the bone sawn off and placed in apposition. The patient felt no pain and suffered very little from headache afterwards.

The sixth, an operation for the removal of a sequestrum from the lower end of the femur, was equally successful.

These cases show that after the injection of a very small quantity of cocaine into the spinal canal a large part of the body becomes insensitive to pain, so much so that major operations can be performed without the use of any other anæsthetic. Unpleasant symptoms sometimes follow, but they also occur occasionally after the use of a general anæsthetic.

To further determine the action of cocaine injected into the spinal canal, Bier and his friend, Dr. Hildebrand, each had given them by a competent physician about 1-8 grain of cocaine through a lumbar puncture. They describe in detail their sensations. In a word, about two-thirds of their bodies became quite insensitive to pain, although tactile sense remained. They received the injections at 7.38 p.m. Later in the evening they dined together, drank wine and smoked several cigars. Bier went to bed at 11 p.m., slept well through the night, awoke fresh and well, and took an hour's walk. At the end of the walk he felt a little headache, which remained during the whole day, rendering his usual occupation more than usually laborious. About 3 p.m. his face

became pale; his pulse was about 70. Later he felt a severe pressure on his head, and if he rose quickly he was dizzy. He became so weak that he had to lie down. There he was obliged to remain for nine days. His appetite and sleep were undisturbed.

Hildebrand also went to bed at 11 p.m., feeling well, but could not sleep and was restless. At midnight he suffered from a severe headache. At 1 a.m. he vomited. He felt unwell for three or four days and had a little weakness for three or four weeks afterwards.

Seldowitsch used cocaine introduced into the spinal canal between the third and fourth lumbar vertebræ in four cases.

- (1) Pirogoff's amputation of the foot for cancer.
- (2) Excision of the os calcis for melanosarcoma.
- (3) Ephthelioma of the skin near the knee joint, excision, skin grafting and removal of enlarged glands in the groin.
- (4) Resection of a tuberculous knee joint.

In all cases the operation was painless, but there followed some unpleasant symptoms. These were elevation of temperature, headache, dizziness, vomiting, dryness of the mouth, and, in one case, dilatation of the pupil, and in another, chill. It is considered to be very necessary not to allow any cerebrospinal fluid to escape.

These experiments are of very great interest. It would seem highly probable that further investigation as to dosage, solution and selection of cases may enable the surgeon in the future to perform certain operations without the use of chloroform or ether. Further experience will teach us whether or not the use of cocaine in this manner is safe and satisfactory. It is quite certain that there occur cases where operations must be performed upon patients to whom one hesitates to give ether; for example, a patient the subject of Bright's disease, and at the same time with a septic peritonitis or strangulated hernia.

Gynaecology.

UNDER THE CHARGE OF WILLIAM GARDNER.

Antiseptic Technique in Gynæcology.

CUMSTON, C.G., M.D. "The Technique of Antisepsis and Asepsis in Gynæcological Surgery."—*Amer. Gyn. and Obstet. Journal*, October, 1899.

The following methods are employed by Dr. Cumston and his assistants, of whom there are rarely more than two, the anæsthetic usually being given by a nurse.

The hands and forearms are thoroughly scrubbed for ten minutes in hot water and green soap, the water being changed four times and the nail brushes boiled before using. The hands and arms are then washed with ether, scrubbed with 90 per cent. alcohol and rinsed in corrosive, 1 in 2,000, which in turn is washed off with boiled water. The nails should be kept so short that "no nail remains to be cleaned." Gloves of cotton or rubber are never used during operation, except that now and then cotton ones are employed in plastic vaginal work. Rubber gloves are worn, however, for making rectal or vaginal examinations and when dressing septic wounds. A linen cap is worn over the hair and has a bag for the beard and moustache attached to it, thus preventing any chance of infection from either the hair of the face or head.

With regard to the patient, both abdomen and vagina are sterilized in all cases of abdominal section. The external genitals and pubes are shaven and scrubbed with soap and water, as is also the vagina, the soap being entirely removed by irrigation with sterilized water, after which the parts are thoroughly irrigated with 1 in 2,000 sublimate solution or 1 in 3,000 solution of nitrate of silver. Vaginal packing before operation is never practiced. The abdomen is thoroughly scrubbed with ethereal soap, which is removed with ether; a scrubbing with 90 per cent. alcohol is followed by the application of a compress wrung out of 1 in 3,000 sublimate, which is retained in position by an abdominal binder. All of the above is repeated when the patient is placed upon the operating table.

For the purpose of rendering the intestine as aseptic as possible, 25 centigrammes of betanaphthol are administered thrice daily for four or five days previous to operation. When the urine is purulent, its condition is improved to a great extent by urotropin, giving 50 centi-

grammes four or five times a day. The day before operation 3 centigrammes of calomel are given every hour for six hours, and followed by 20 grammes of sodium phosphate.

Twisted silk is used for tying large vessels and is prepared by boiling for half an hour and then storing it for a week in a 1 in 2,000 solution of lactate of silver, from which it is transferred to sterile glass jars which are placed in the sunlight for forty-eight hours, this causing decomposition of the lactate of silver and the deposit of a layer of metallic silver on the surface of the silk. For tying off the broad ligament, catgut which has been sterilized in formalin, is used, as also for all plastic vaginal operations and all sutures buried in the abdominal wound.

Gauzes for packing the cervix or vagina are sterilized by impregnating them with salts of bismuth, because they can be steamed without injury and are practically non-toxic; but for tubercular lesions, iodoform gauze is employed.

Urinary Incontinence.

RIES, EMIL, M.D., Chicago. "Incontinence of Urine: Report of a Peculiar Case."—*Amer. Gyn. and Obstet. Journal*, November, 1899.

A patient, 38 years of age, stated that she was quite well up to her marriage, nothing unusual being discovered in her sexual history, except that she had never been pregnant. From the time of her marriage the incontinence had been growing worse, until now she had had complete incontinence for two years. Dyspareunia was intense.

On examination of the urine no abnormality was found. The skin of the vulva was red and inflamed, the hymen was torn, and the vagina admitted one finger easily. The pelvic organs appeared to be normal. Catheterization of the bladder allowed about 10 cc. of urine to escape, and cystoscopic examination of the bladder revealed nothing unusual; but urine escaped along the urethra at the side of the cystoscope. It was then ascertained that the urethra would admit the little finger. On examining the husband it was seen that the penis had been rendered small and somewhat misshapen by an accident, so that clearly the urethra had been dilated by the penis during sexual intercourse. The patient was cured by an operation consisting of twisting the urethra.

Cystocele and Urinary Prolapse.

WATKINS, T. J., M.D., Chicago. "The Treatment of Cystocele and Uterine Prolapse after the Menopause."—*Amer. Gyn. and Obstet. Journal*, November, 1899.

The operations for these conditions may be classified under three heads, viz.:—

(1) Plastic vaginal operations: (2) Plastic vaginal operations combined with abdominal suspension: (3) Hysterectomy.

Most colporrhaphies only narrow the vagina and do not tend to lengthen the anterior vaginal wall. This result is best obtained by Emmet's operation, as this brings together the tissue at the sides of the cervix and so keeps it up. Lateral colporrhaphy is valuable for the cure or relief of prolapse of the urethra, but not of the bladder.

Vaginal plastic operations plus *suspensio uteri* are not to be recommended on account of the gravity of the operation, the danger of post-operative complications, and the danger of recurrence of the prolapse.

"Hysterectomy for prolapse and cystocele during the child-bearing period is an unjustifiable operation," and even after the menopause its propriety is questionable. The writer describes an operation for the cure of this condition, in which vaginal fixation of the uterus is combined with suture of the anterior vaginal wall to the sides of the broad ligament, and plastic work upon the posterior vaginal wall.

New Operation for Procidentia Uteri.

PARSONS, J. INGLIS, M.D., M.R.C.P. "Sixteen Cases of Procidentia and Two of Prolapse Treated by a New Method."—*Brit. Med. Journal*, Oct. 14, 1899.

The new method described by the writer consists in the injection of an irritating solution into the bases of the broad ligaments so as to set up a localised inflammation with the formation of cicatricial tissue, which holds the uterus in position. The solution employed is sulphate of quinine, as it is an irritant and yet a powerful antiseptic. Dr. Parsons reports only one recurrence out of the total of eighteen cases treated by this method, and attributes the failure in this case to the use of a too weak solution. In several of the cases the injection had to be repeated.

F. A. L. Lockhart.

Pediatrics.

UNDER THE CHARGE OF A. D. BLACKADER.

Malaria in Children.

MONCORVO. "Malaria in Children."—*Pediatrics*, Aug. 1, 15, Sept. 1, 15, 1899.

In an extensive article, Moncorvo reviews the whole subject of malaria in children in the light of an experience of 5,000 cases in Rio Janeiro. He agrees with most other writers in stating that "infantile malaria is quite unlike the same affection in the higher ages," and possesses, as it were, a peculiar "*cachet*." It, moreover, resembles syphilis in the extent to which both affections cause physical and mental deterioration. The mortality in early infancy from this disease is much greater than is generally supposed, no less than 36 per cent. of the total morbidity in Rio being due to malaria, and the first year of life represented 35 per cent. of this total. The severity of the disease is thus in inverse ratio to the age. Moncorvo also believes that the disease can be derived *in utero*, and cites several cases which, while not absolutely conclusive, can with difficulty be explained on any other hypothesis. He believes in the direct transmission of the malarial germ from the mother to the fœtus through the placental circulation.

With regard to race, to a certain extent the less susceptibility of the children of negroes is established by his figures, but they cannot be claimed to be immune. The influence of season is much the same as in other countries, the greater proportion of cases occurring during the acme of the summer season, while the humidity consequent upon the effect of a short rain after a period of drought favours the multiplication of the germ of paludism. With regard to the mode of infection, Moncorvo, while accepting the theory that the mosquito is the most common agency in the transmission of the germ, considers "that clinical facts put it beyond doubt that infection also occurs through drinking water." As a strong predisposing cause he looks upon all gastrointestinal disorders and especially on dilatation of the stomach in young children, explaining this fact by the probable power of normal gastric juice (altered in these conditions) as a destructive agent to the organism. In discussing the means of infection in nursing babies, it is pointed out that the milk of a mother suffering from malaria does not contain the parasite, and therefore it must come from without, presumably from the mosquito,

unless we admit the possibility of transmission of the parasite through the air. A state of distrophy induced by syphilitic, tubercular, or malarial disease in the parent strongly predisposes, whether the child be the subject of inherited disease or simply a weakling.

The clinical characters of malaria in children bear very little resemblance to those observed at other ages. The onset is usually insidious, the child becoming fretful and restless and evidencing great thirst, more especially at night, perhaps appearing quite well again during the day. The urine becomes scanty and there is a colicky diarrhoea with rapid loss of weight. These symptoms may last for days or even weeks, and are often attributed to anything but the right cause. Finally, the marked elevation of temperature almost invariably of a quotidian, rarely of a tertian, and never of a quartan type, and the occurrence of other well-marked symptoms, establish the diagnosis. The temperature never quite falls to normal and the maximum and minimum never correspond from day to day, while the attacks do not present the three characteristic features of the disease in adults. The chill is replaced by coldness of the extremities with cyanosis, then follows a rise in the peripheral temperature with general or partial sweating. During the pyrexia the diarrhoea is aggravated, in older children being often dysenteric in character, and "the breath has a peculiar odour like chloroform, perceived at a distance." Enlargement of the liver is nearly always met with, but the opposite is true with regard to the spleen, possibly, Moncorvo suggests, owing to the difficulty of estimating the size of the latter organ in infants from its being less accessible to palpation. The enlargement of the liver is often extreme, the organ reaching to the level of the anterior spine of the ilium and becoming painful to the touch. This symptom forms a valuable diagnostic sign.

Cases show a marked tendency to assume a pernicious character, the disease taking on what is usually described as a typhoid state with a choleric form diarrhoea and terminating in coma or convulsions. A convulsive type is also described, some cases showing an eclamptic character from the start. Secondary infections in the form of visceral inflammations are common, nephritis being very frequent and comparable to the nephritis of the acute exanthemata. The disease, too, occasionally assumes rare forms, among which may be mentioned insomnia, peripheral or visceral neuralgias, etc., without other evidences of the affection. An eruption closely resembling erythema nodosum in its site and characters, is occasionally met with. In prolonged cases malarial cachexia develops. Diagnosis, as would be expected, is often difficult, a knowledge of the above mentioned symptoms taken in conjunction with the locality and surroundings of the patient and the meteorological conditions, in the absence of other ascertainable cause, being relied on.

The presence of the plasmodium malariae in the blood, which is now considered essential to a diagnosis in an adult, is not given prominence by Moncorvo, partly on account of the difficulties met with in resistance of the parents to such a method of examination and partly because of the difficulty (?) of obtaining the parasite in children.

Prophylactic treatment consists in the avoidance of dangerous surroundings, the sterilization of all drinking water, protection from the bites of mosquitoes and the use of quinine when the disease is epidemic. During the disease quinine should be given at regular intervals, and where it is rejected by the mouth may be injected hypodermically into the muscles behind the trochanter or between the shoulder blades, the chlorhydrate or chlorhydrosulphate being used in concentrated solution. After an experience of 20,000 injections, Moncorvo speaks very highly of this method. To reduce hyperpyrexia antipyrine is relied upon. A tincture made from the leaves of the common sun-flower, *helianthus annuus*, has been found of value. The other manifestations of the disease are to be treated by the usual methods, calomel being mentioned as of especial value in the intestinal, and caffein in the adynamic types.

Pulmonary Hæmorrhage in Exploratory Puncture of the Chest

KOPLIK, HENRY. "Pulmonary Hæmorrhage following Exploratory Puncture of the Chest for Fluid in Infants and Children."—*Archives of Pediatrics*, August, 1899.

The use of the aspirating needle as a routine method of confirming or determining diagnosis in the pulmonary affections of infancy has become so common lately that the fact that such a procedure is not absolutely free from risk deserves to be noted. Koplik, who was one of the first to advocate exploratory puncture, draws attention to a peculiar accident which occurred in four of his cases, namely, pulmonary hæmorrhage. The needle in these cases had evidently gone directly into the substance of the lung and pierced a blood vessel, the lung being adherent through the pleura with the chest wall. Blood came from the lips and nose in a spurt and was mingled with frothy sputum and was very alarming, although fortunately not followed by collapse or syncope.

Koplik considers that exploratory puncture is unjustifiable unless the physical signs point strongly to the presence of fluid. He cites a number of cases seen by him in consultation in which a needle had been introduced by the attending physician merely because the temperature had kept up after an attack of pneumonia and empyema or pleurisy was suspected of being the cause. He strongly condemns the practice of making repeated punctures at one sitting, and especially that of partially withdrawing the needle and then pushing it in various directions in quest of pus.

Inanition Fever.

CRANDALL, FLOYD M. "Inanition Fever."—*Archives of Pediatrics*, March, 1899.

Under the above heading Crandall describes a febrile attack occurring during the first five days of life and not due to septic or organic causes. Its frequency is much greater than would be expected—135 out of 500 children born consecutively in the Sloane Maternity, and 20 out of 200 in the Nursery and Child's Hospital, New York, being affected. The disease is overlooked from neglect in using the thermometer.

"The symptoms are quite characteristic and develop alike in robust and weakly infants. On the second or third day the child, who has perhaps been quiet and restful, becomes irritable and restless. It worries and cries and sucks its fingers or anything it can get into its mouth." Unless the thermometer is used there may be no evidence of the amount of fever present. The temperature rises gradually during twenty-four or thirty-six hours and then suddenly reaches its maximum, often 104° to 105° F. Loss of weight is very rapid. Starvation, owing to an absence or insufficient supply of milk from the mother is the whole cause, and once this is remedied the temperature falls rapidly to normal. In view of the frequent delay in the establishment of lactation every new-born infant should receive water every two hours, two ounces at a time being allowed if the child seems to require it. When the milk supply is established the habit of giving water to the baby several times a day should still be continued. Where the mother is nursing the child an examination of the milk should at once be undertaken, and if it is found insufficient artificial food should be given in addition.

G. Gordon Campbell.

Reviews and Notices of Books.

THE ORIGIN, GROWTH AND FATE OF THE CORPUS LUTEUM as Observed in the Ovary of Pig and Man. By J. G. CLARK, M.D. The Johns Hopkins Hospital Reports, Vol. VII., No. 4.

This paper also appeared in German in the *Archiv. für Anatomie und Physiologie, Anatomische Abtheilung*, 1898.

It is based on work done in the Anatomical Laboratory at Leipsic undertaken by Dr. Clark at the suggestion of Professor Spalteholz and "by the employment of a digestion method especially devised for the isolation of connective tissue, and of special methods of staining," the author hopes to have arrived at conclusions which can leave no further doubt as to the origin of the corpus luteum in the higher animals and man. Dr. Clark first briefly reviews the literature of the subject in the various theories from that of Von Baer in 1827 to that Sobotta in 1897, and then describes the materials and methods of work he adopted. The work was first begun on the human corpus luteum at the Johns Hopkins Hospital but he soon found it necessary to obtain a series for comparison from some one of the lower animals. For this purpose Dr. Clark selected the pig's ovary from material obtained at the Leipsic slaughter house. For a description of the author's methods of work, we must refer the interested reader to the paper.

Of Dr. Clark's conclusions (which are appended in full) from this admirable piece of work the most interesting seems to be that referring to the function of the corpus luteum ; this is surely an admirable bit of reasoning based on laborious investigation.

Conclusions :—

1. The lutein cells are specialised connective-tissue cells which appear in the inner layers of the follicle wall at the time when it begins to show a differentiation into the theca interna and externa, and gradually increase in size and number until the period of maturity when they have assumed all of the characteristics which cause them to be designated lutein cells. The corpus luteum is therefore not an epithelial but a connective-tissue structure.

2. In the growing follicle the lutein cells are increased at the expense of the ordinary connective-tissue cells until the latter are represented by only a few cells and a fine reticulum in the mature follicle. This reticulum forms a fine web stretching from the theca externa among the lutein cells, beyond which it is woven into a more or less fine line known as the *membrana propria*.

3. At the time of the rupture of the follicle, the *membrana propria* is broken through in places by the advancing lutein cells and blood-vessels but quickly reforms a connective tissue line in front of the lutein cells which push it towards the centre, where it finally forms a dense core of interlacing fibres.

4. After the rupture of the follicle the lutein cells (connective-tissue cells) show a remarkable activity in growth, increasing both in size and numbers until the empty cavity is completely filled in, after which they begin to undergo degeneration.

5. The fine reticulum between the lutein cells of the mature follicle is the antecedent of the connective-tissue cells which are quite sparse in the first stage of the growth of the corpus luteum, but become the predominating structure at the height of its development.

6. The degeneration of the lutein cells is probably induced through the increasing density of the connective tissue surrounding them.

7. The retrogression of the corpus luteum is characterised first by the fatty degeneration of the lutein cells, followed by the shrinking of the connective-tissue net into a compact body (corpus fibrosum), after which it is gradually removed through hyaline changes until a very fine scar-tissue is left which is at last lost in the ovarian stroma.

8. The blood-vessels of the corpus luteum are quite resistant and the larger ones are among the last structures to give way in the process of retrogression.

9. The office of the corpus luteum is that of a preserver of the ovarian circulation which exercises its function almost perfectly in the younger women, but which at last with the increasing density of the stroma, begins to fail in its activity, its remains being slowly or imperfectly absorbed until these deposits finally exert the opposite influence and hasten the laming of the circulation.

10. Cessation of ovulation is induced not through the disappearance of follicles *per se*, but through a densification of the ovarian stroma and a destruction of the peripheral circulation which prevents their development.

The article is beautifully illustrated by reproductions by Veib & Co., of Leipsic, of camera-lucida drawings of the stained and digested microscopic sections by Dr. Etzold.

W. G.

CURE PROMPTE ET RADICALE DE LA SYPHILIS. Par Le Dr. J. F. LARRIEU. Tme édition, pp. 131. Paris, Société d'Éditions Scientifique, 1899.

This book, which has reached its third edition and runs to 131 pages, might easily have been comprised in a pamphlet of two or three pages. In it the author professes to cure syphilis absolutely and for ever by his method of treatment. To abort certain cases when the chancre has not become indurated or the glands affected is, he says, quite easy. Large doses of mercury and iodide of potassium he regards as most injurious and useless in the cure of this disease.

In the first stage he applies Vienna paste to the chancre, mercurial inunction to the enlarged glands, but most important of all is the internal treatment. Early in the morning for twenty consecutive days he gives in water three to five drops of freshly made tincture of iodine and a tablespoonful of a mixture made up of 20 grammes of iodide of sodium in 300 grammes of distilled water. The last ten days of the month the patient rests from his medicines. Where secondary symptoms have

already developed, he gives the same treatment, and where the tertiary stage has ensued, a bath with 20 grammes of sublimate in it is given once a week. Locally, he applies a weak ammonio-chloride of mercury ointment.

The duration of treatment is four months and no case is not cured permanently in eight months. When the treatment is carried out in the primary stage no secondary symptoms develop, and if the treatment is applied in the secondary stage no tertiary symptoms are ever manifest. He lays great stress on the administration of the tincture of iodine and the rest from treatment for ten days out of every month. This treatment in Dr. Larrieu's hands and those of his friends has never failed and the most obstinate cases have yielded to it. It is almost too good to be true, but perhaps it is worth a trial.

F. J. S.

TRANSACTIONS OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.
Voll. XX.

The present volume contains the papers read before the College from January to December, 1898. Many of these are very interesting. In the list we notice several papers upon the treatment of enteric fever by systematic cold bathing; one upon multiple gangrene of the skin; one describing a case of spontaneous gangrene of the extremities; and in another a description of the skeleton of the American giant with notes upon the relation of acromegaly and giantism. The volume contains also a short memoir of Dr. Harrison Allen, by Dr. H. C. Wood, with a list of his scientific and medical writings.

A. D. B.

ELEMENTS OF LATIN FOR STUDENTS IN MEDICINE AND PHARMACOLOGY.
By GEORGE D. CROTHERS, A.M., M.D., and HIRAM H. BICE, A.M.
The F. A. Davis Company, Philadelphia, 1898.

This book, according to the authors, is designed to present within the briefest possible compass those principles of Latin etymology and construction, which are essential to the intelligent use of the terminology of pharmacy and medicine.

Many students commence the study of medicine with but a very imperfect knowledge of Latin. To such, a small work like this, which not only states the essential facts of medical Latin, but also explains all the Latin words and phrases in general use in pharmacy and prescription writing, giving their correct accent, must prove of much value. The notes in the end of the book explaining medical facts given in the Latin exercises will be of service to younger students. The chapters on anatomical proper names and their origin is an excellent one for reference.

A. D. B.

A TEXT BOOK OF MATERIA MEDICA, PHARMACOLOGY AND THERAPEUTICS. By GEORGE FRANK BUTLER, Ph. G., M.D., Professor of Materia Medica and Clinical Medicine in the College of Physicians and Surgeons, University of Illinois, etc., third edition, thoroughly revised. W. B. Saunders, Philadelphia, 1899.

This text book, now in its third edition, is one of the best which has

been recently presented to the medical student. In the present edition several important changes for the better have been made in describing the physiological action of drugs. Drugs are grouped according to their therapeutic action; by far the most convenient way of fixing their more important actions upon the mind of the student. There are a few illustrations scattered throughout the text. The chapter on prescription writing is good, and the few pages devoted to the consideration of Latin terminations are, in our opinion, quite sufficient to supply the needs of the average medical student. The letter press is excellent.

A. D. B.

TEXT BOOK OF PHARMACOLOGY AND THERAPEUTICS, OR THE ACTION OF DRUGS IN HEALTH AND DISEASE. By ARTHUR R. CUSHNY, M.A., M.D., Aberdeen, Professor of Materia Medica and Therapeutics in the University of Michigan. Illustrated with 47 engravings. Lea Brothers and Company, Publishers, Philadelphia and New York, 1899.

Professor Cushny was a pupil and afterwards an assistant of Schmiedeberg, and his present work has been largely inspired by the classical "Grundriss" of that eminent pharmacologist. In the present volume the pupil has done honour to his teacher; the textbook he has presented us with, is, in our opinion, the best exposition of our knowledge of pharmacology which has yet been given to the medical public.

The opening chapters contain many thoughts which are of much interest to physicians. Speaking of the relation between chemical composition and pharmacological action, the writer states "as the effect of drugs on protoplasm is conceived to be due to a chemical reaction between them, it may be inferred that those drugs which present a close resemblance in their chemical properties and chemical composition, must induce similar changes in the organism." Such a general statement, however, holds true only to a very limited extent. Many members of the methane series depress the central nervous system; the heavy metals, to some extent, also resemble each other in their effects upon the organism; but whenever an attempt is made to follow this relation in detail the analogy breaks down, because factors which it is impossible to deduce from the chemical composition make themselves felt. Exactly the same thing occurs in chemistry. The sulphides of the heavy metals are not all of the same colour, nor are their chlorides equally soluble in water. For the present all that can be said is that, while it may be inferred with some probability that any substance belonging to certain wide chemical groups will induce symptoms in the organism resembling in general character those of other members, provided that it does not contain some radical which alters its action, nevertheless the details of this action can be ascertained only by actual experiment, in the same way as the details of its chemical behaviour can only be known by performing the necessary reactions.

Drugs are classified in groups according to their pharmacological action rather than according to their therapeutic action. On this point the author says:—"The classification of drugs and poisons according to their action on living matter is the natural one, and is based on the same logical principle as the modern classification of plants in botany, and of animals in zoology. In this way substances are grouped together which

have most points of resemblance, whether they are obtained from the same or from different orders of plants, and without reference to any relation which they may bear in therapeutics." Drugs which resemble each other in their pharmacological action are often used for very different purposes in therapeutics, although this is much less frequently the case now than formerly. This is very generally due to the failure of clinicians to observe the resemblance in the action of drugs. As they grow more familiar with the results of animal experiment, they will recognise that in many instances drugs which they now regard as distinct on account of superficial differences, really resemble each other in all important points, and may be substituted for each other in therapeutics." In this way it is to be hoped that the natural classification of drugs will gradually be found to approach more and more closely to the therapeutic.

Professor Cushny writes as a pharmacologist rather than as a physician. Throughout the work the pharmacological action of a drug as tested by experiments, rather than the therapeutic action of a drug tested at the bedside, is given prominence. Nevertheless, we feel convinced that physicians generally will be all the better for studying their pharmacology from this point of view, as so many unproved and misleading statements as to the action of drugs are often made. Still it must be remembered that the therapeutic action of a drug must not in all cases be limited to the exact field covered by its physiological action.

This volume is well illustrated by numerous pulse and respiration tracings which very graphically show the influence of the drug on these important systems. There is a very excellent chapter on the pharmacology of the internal secretions. The work is written in a very interesting way and the publishers have spared no pains in the matter of letter press and binding. We can cordially recommend it to all our readers who are desirous of acquainting themselves with the latest knowledge on this very important subject.

A. D. B.

EXTRA-UTERINE PREGNANCY: A CLINICAL AND OPERATIVE STUDY.

By JOHN W. TAYLOR, F.R.C.S., Eng., Senior Surgeon to the Midland & Birmingham Hospital for Women, &c., &c., &c. H. K. Lewis, London, 1899.

Probably no subject in obstetric medicine has been of more interest in recent years than extra-uterine pregnancy. For a long time an unexplored field, much attention has been given to it during the last twenty years. Dr. Parry's book in 1876 and Mr. Lawson Tait's in 1888, were notable contributions. More recent is Dr. J. Clarence Webster's admirably illustrated work, and Mr. Taylor's book, so far as we know, is the latest monograph on the subject.

It, as was Mr. Tait's, is based on the Ingleby Lectures at Mason University College, Birmingham. The surgical work in ectopic gestation done in Birmingham, must always remain notable, as it was here that Lawson Tait did the pioneer work which has had so profound an influence on the gynaecological world. Mr. Taylor was at one time an assistant to Mr. Tait and is now the senior surgeon to the same hospital where Mr. Tait did so much of his work.

medical subjects. It is based on the considerable personal experience of 42 cases. His long interest in the subject is manifested by a series of papers appearing in various medical journals and society transactions since 1891. In his first "Introductory and Historical" chapter, Mr. Taylor, after alluding to Lawson Tait's brilliant generalization, that all cases of extra-uterine pregnancy are originally tubal or interstitial, and tracing the successive observations of Dr. Berry Hart, Mr. Bland Sutton and others, claims the original observation announced to the British Gynæcological Society in 1894, that the abdominal ostium of the tube in the so-called tubal mole and tubal abortion commonly remains open, and that intraperitoneal hamatocoele, whenever it is found, can usually be traced to the blood-drip from the fimbriated end of a tube in which a mole of pregnancy has formed.

In the second chapter on "Causation," the still vexed question of the site of fertilisation of the ovum is discussed, and after a brief review of all the evidence Mr. Taylor concludes that this may be in any part of the tube. He rejects Mr. Tait's theory that denudation of the epithelium has any influence in causing tubal fœtation, but from published cases in which polypi, myomata and swellings of the mucosa were present, believes it proven that those and other obstructions to the passage uterus-wards of the ovum, may determine the point at which it adheres.

When a tubal pregnancy becomes abdominal or ventral, the author believes that continued life and development can continue only when the membranes remain entire. This is contrary to the teachings of Tait and Bland Sutton, but Mr. Taylor proves his contention by a case of his own operated on after full term. In this case a transparent membrane (the amnion ?) surrounded the fœtus in every direction, and though invisible on the intestine it could be seen as a thin film passing from coil to coil, completing the sac in which the pregnancy had developed. These observations were confirmed by Mr. Martin and Mr. Jordan, his colleagues, who assisted.

Mr. Taylor agrees with the generally accepted belief that we have no reliable evidence of true ovarian pregnancy.

In the chapters on "Operation," the author is fully in accord with the modern practice of vaginal section in suitable cases of localised hamatocoele and certain cases of intact extra-uterine pregnancy up to mid-term. The limitations of suitability for this operation and its description are laid down with admirable clearness.

In the management of tubo-abdominal pregnancy at full term, Mr. Taylor justly remarks that "The crux of the operation is the treatment of the placenta." If it can be removed at once with safety, this should be done. The problem is to control hæmorrhage. The differences of opinion we see expressed on this point, doubtless depend on differences of individual reference of cases. But even in cases of living child, and therefore of placenta with active circulation, Mr. Taylor thinks that often immediate removal is advisable, and for the method of dealing with it he gives valuable suggestions based on a case of his own.

In the tubo-ligamentary form most authorities will agree with him that the placenta should be left to come away of itself, the cavity containing it being kept well irrigated and drained.

Of the illustrations of this book not very much in praise can be said, but it is an admirable critical summary of our knowledge of the subject, and contains a number of original observations by a careful observer from a relatively large personal experience.

W. G.

ENLARGEMENT OF THE PROSTATE: ITS TREATMENT AND RADICAL CURE.

By C. MANSELL MOULLIN, M.D. Oxon., F.R.C.S., Surgeon and Lecturer on Surgery at the London Hospital, etc. Second Edition, 1899, H. K. Lewis, London.

This manual, by the author of Moullin's Surgery, deals with a subject which is just now exciting a great deal of interest amongst active surgeons. With many of the conclusions arrived at by the author, other eminent surgeons would doubtless take issue. The book is radical in its teachings. Many an old surgeon, for example, will shrug his shoulders at the author's diatribe against the use of catheters. But, although one may not agree with many of the views advocated by Moullin in this book, one must admit that here is food for thought, and that perhaps surgeons have, as a class, been somewhat remiss in the study of a subject which is of great importance to a large percentage of men—especially old men. Only a bare statement of some of the more important points made by the author can be noticed in a review such as this.

He maintains, in the first place, that the "function of the prostate gland is entirely sexual." Only incidentally does it take part in the act of micturition. He next goes on to show that the enlargement of the prostate (senile enlargement as we would call it) is not inflammatory, "nor is it mere hypertrophy, compensatory or otherwise." It is essentially an interstitial fibro-adenoma of the gland, and hence the increased size. He discusses the different theories as to the causation of this enlargement and proceeds to prove that old age is not a necessary factor in its etiology. The effects of this trouble on the bladder and kidneys are next exhaustively dealt with, and many of the unhappy sequelæ he attributes to the habitual use of catheters. The symptoms of enlarged prostate are also thoroughly discussed, and this is followed by a chapter on the differential diagnosis between simple enlargement and the other pathological conditions which give much the same set of symptoms.

The question of treatment is next taken up, and it is this part of the book which most interests the busy practitioner. At the outset we are met by a statement which shows how hard errors die even in these palmy days of micro-organic pathology. "Patients with enlargement of the prostate are peculiarly susceptible to chill if they are tired or overheated, and the least chill may cause retention of urine." This does seem a fair case of *post hoc* reasoning. It is only a lapse, however, for the author elsewhere shows that he thoroughly appreciates the part played by bacteria in causing "urethral fever" and post-operative cystitis. With true surgical contempt, he dismisses drugs in a few words and then goes on to consider the palliative treatment of the disease, wherein frequent mention is made (favourably, of course) of "my own aseptic catheters." Were he to read the United States journals he would find that in the matter of aseptic catheters he has several competitors. He takes strong ground against continuous drainage by catheter in cases of cystitis.

In cases of retention, where a catheter cannot be introduced without violence, he advises immediate tapping of the bladder, but with true English conservatism, he would use the trocar and canula above the pubes or the old bent trocar by rectum. No mention is made of the harmless suprapubic aspiration of a distended bladder by a Dieulafoy or other good aspirator. We quite agree with him that in cases of acute retention it is "better to tap at once," but fail to see why he should follow the antiquated and dirty route through the rectum, to say nothing of tapping the trigone of the bladder in the dark.

The chapter on radical treatment is especially well written, and should be read carefully by every surgeon. He first discusses the different operations for prostatectomy or surgical removal of the growth, including the use of the electro-cautery, and shows in what instances certain operations gives better results than others. He thinks prostatectomy has a good future before it. Next, as a corollary to his views on the function of the gland, he strongly urges a fair trial for castration in old men. Referring to his own cases of double orchidectomy, thirty in number, he states "that diminution in the size of the prostate followed in every one of my cases," and further, that the relief was surprisingly speedy and the bad effects *nil*. Regarding vasectomy (or removal of a portion of the vas deferens, and not of the testicle) he is doubtful if any good result follows directly from that simple operation, but is inclined to think that the good results attributed to it are really due to the subsequent atrophy of the testicle.

J. M. E.

A TEXT-BOOK OF PHYSIOLOGY. By WINFIELD S. HALL, Ph.D. (Leipsig), M.D. (Leipsig), Professor of Physiology, North-Western University Medical School, Chicago. Pp. 671. Lea Brothers & Co., Philadelphia and New York, 1899.

This book presents a very striking individuality. This is due to the chapters being arranged in a somewhat novel way, and to the book containing much matter not usually found in text-books of physiology. Take, for instance, the chapter on circulation. After explaining briefly the need of a circulation, the author devotes several pages to a discussion of the comparative physiology of the tissues and organs concerned. This is followed by an anatomical introduction containing a brief summary of the structure of the blood-vascular system, the lymphatic system and the spleen, with a brief paragraph on the embryology of the same. Next comes a presentation of the physical laws governing the behaviour of fluids in tubes. A fourth introductory section traces the views and discoveries connected with the circulation from the time of Aristotle to that of Harvey and Malpighii. Finally, he proceeds to the discussion of the physiology of the blood and circulation in its more restricted sense; but, as a result of the space already taken up by the excellent but lengthy introduction, is compelled to dismiss some important matters very briefly. The author succeeds, however, in making his account of the circulation very interesting and fairly complete.

The chapters on digestion and metabolism are among the best in the book and are comparatively full, especially in the chemical portions, which abound in graphic formulæ. The chapter on the central nervous

system was deputed to the late Dr. P. L. Howard. It is up to date and well illustrated.

puscles Erlich's old classification is followed and basophile cells are not mentioned. The cause of the first sound of the heart is discussed without any reference whatever to the valves. Paraxanthin and theobromin are given as identical. Albuminoids are included among the proteids. The blood supply of the glomeruli in the amphibian kidney is wrongly given. We seek in vain for any reference to the physiology of sleep. There is no adequate account of the centres of speech. In general, with the exception of certain matters of technique, such as methods of blood examination, the author fails to emphasize the facts bearing on their future work as much as is desirable for medical students. The proof-reader has failed to observe three figures referred to by their wrong numbers on page 595, and the name of an authority is wrongly spelled on page 226.

On the whole, however, the faults are of a nature which would admit of easy elimination, and, in spite of their presence, the book is attractive in style, scientific in spirit, and as complete as most student's textbooks.

W. S. M.

THE MEDICAL NEWS VISITING LIST FOR 1900. Weekly (dated, for 30 patients) ; Monthly (undated, for 120 patients per month) ; Perpetual (undated, for 30 patients weekly per year); and Perpetual (undated, for 60 patients weekly per year). The first three styles contain 32 pages of data and 160 pages of blanks. The 60-patient Perpetual consists of 256 pages of blanks. Each style in one wallet-shaped book, with pocket, pencil and rubber. Seal Grain Leather, \$1.25. Thumb-letter Index, 25 cents extra. Philadelphia and New York, Lea Brothers & Co.

The *Medical News Visiting List* opens with 32 pages of printed data of the most useful sort, including an alphabetical Table of Diseases with Approved Remedies, a Table of Doses, Sections on Examination of Urine, Artificial Respiration, Incompatibles, Poisons and Antidotes, a Diagnostic Table of Eruptive Fevers, and a full-page plate showing at a glance the incisions for ligation of the various arteries, an invaluable guide in such emergencies. The *Medical News Visiting List* is issued in four styles, adapted to any system of records and any method of keeping professional accounts. It is printed on fine, tough paper, suitable for pen or pencil and durably and handsomely bound in the size of a wallet for the pocket. When desired a Ready Reference Thumb-letter Index is furnished which is an economizer of time.

THE TREATMENT OF PELVIC INFLAMMATIONS THROUGH THE VAGINA.
By WILLIAM R. PRYOR, M.D. Pp. 247. W. B. Saunders, Philadelphia, 1899.

In the preface of this work the author states that it is but an elaboration of his lectures in the New York Policlinic, and that while most of the substance is written *ex cathedra*, he has consulted the opinions of such authors as Récamier, Péan, Ségond, and Pozzi, in Europe, and Gaillard Thomas, Byford and Henrotin, in America.

Pathology has been entered into only in so far as was necessary to iden-

tify the lesions present in his cases. He places more reliance upon clinical signs and symptoms than upon bacteriological examination except when performed by the most expert.

The treatise is written in a clear and powerful style, and the teaching throughout is practical and sound, although perhaps a little too much is claimed for vaginal section for removal of the uterus and its adnexa. The illustrations are without exception useful and well selected; that on page 207, illustrating the condition of the pelvis some years after hysterectomy had been performed, is especially to be commended as showing that shortening of the vagina is by no means a constant sequela of total hysterectomy.

The book will be found useful both to the operator and those who have more faith in milder methods of treatment.

F. A. L. L.

ANNUAL REPORT OF THE SUPERVISING SURGEON-GENERAL OF THE
MARINE HOSPITAL SERVICE OF THE UNITED STATES FOR THE
YEAR 1897. Washington, 1899.

In our last number we referred to the Annual Report of this Service for 1898. The report for the previous year, 1897, just issued, has come into our hands and forms a volume of 800 pages, characterised, like the previous volume, by the remarkable diversity of its contents. Among those to which we would call especial attention are :—Surgeon-General Wyman's address upon the international responsibility with regard to epidemic disease; the report of the International Committee on the Pan-American Medical Congress on International Quarantine; numerous papers by various members of the staff upon: Hemiplegia complicating enteric fever (Stoner), Formaldehyde gas in Tuberculosis (Kalloch), Fracture of the Base of the Skull (Perry), Malarial Fevers of Memphis, Tenn. (Young), a Case of double Typhoid Malarial Infection (Greene), and Cases of Cocaine poisoning (Young and Gilbert). In addition to these there are Reports and Annual Histories of Cholera, Small-pox, Plague, Beri-Beri, Leprosy and Yellow Fever, with a long series of reports upon yellow fever epidemics during the fall of 1897.

J. G. A.

A PRACTICAL TREATISE ON MATERIA MEDICA AND THERAPEUTICS, with
Special Reference to the Clinical Application of Drugs. By JOHN V.
SHOEMAKER, M.D., LL.D., Professor Materia Medica and Therapeu-
tics and of Clinical Medicine, Medico-Chirurgical College of Phila-
delphia, etc., etc. Fourth Edition, Revised. The F. A. Davis Com-
pany, Philadelphia, 1898.

This is a new edition of a well-known work which, by the incorporation of all the recent additions to our materia medica, has been brought well up to date. The distinguishing feature of the work is its wealth of therapeutic facts. Not only does it contain a description of all the more commonly employed drugs, but of many others which can have only a local use. It forms, therefore, an excellent volume of reference, while its numerous prescriptions illustrating the mode of employing each drug, must be of much service to the young practitioner. Few works contain

an equal amount of practical information. We have therefore much pleasure in recommending the volume to our readers.

A. D. B.

A TEXT-BOOK OF MECHANO-THERAPY (Massage and Medical Gymnastics). By AXEL V. GRAFSTROM, B.Sc., M.D. Especially prepared for the use of Medical Students and Trained Nurses. With eleven pen-and-ink sketches by the author. Philadelphia, W. B. Saunders, 1899.

In this volume the subject of Mechano-therapy is presented in concise form, but, we hesitate to add, with sufficient clearness to the understood by the student. The writer follows, with some modifications, the system practiced at the Royal Gymnastic Institute in Stockholm. After a brief statement of the general effects to be obtained from active and passive movements, massage, the various specialised movements to be executed to obtain the best results in medical gymnastics are described. The special treatment which, in the author's opinion, is required in affections of the respiratory and cardiac systems, in rheumatism and gout, in diseases of the urinary organs, in constipation, etc., is then detailed. "The short review of the etiology, morbid anatomy, and principal symptoms of a displaced kidney" is, in our opinion, not only faulty but entirely out of place in a work of this character.

A. D. B.

PRACTICE OF MEDICINE. A manual for Students and Practitioners. By GEORGE E. MALSURY. Lea Brothers & Co., Philadelphia and New York, 1899.

This book forms one of a series of pocket text-books issued by Lea Brothers & Company. To treat the whole subject of internal medicine in such a small compass is obviously a task of no little difficulty. The writer has succeeded in presenting a vast amount of information in very concentrated form, and the work is well up to date in recording the latest observations and discoveries of medical science.

In our opinion, the only use of such books is to enable the student to revise rapidly before examination. For the less important diseases such a work will answer well, but most examiners would probably demand a more detailed knowledge of the more important diseases than can be gleaned from the pages of this little book. The clear print and excellent paper form a pleasing contrast to many works of a similar character.

F. G. F.

PYORRHEA ALVEOLARIS : And its Relations to General Medicine. By JOHN FITZGERALD, L.D.S., Dental Surgeon to the Italian Hospital and to the National Hospital for Diseases of the Heart and Paralysis, Soho Square. London: The Medical Publishing Company, Limited, 1899.

This book is a series of papers on "Rigg's disease," written especially for physicians, and it will repay careful reading. It may be doubted, however, whether physicians generally will care to undertake the treatment of this troublesome and persistent disease.

T H E

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

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NO. 12.

SURGICAL INTERFERENCE IN HÆMATEMESIS.

An interesting article on the subject of surgical interference in cases of persistent and extreme hæmatemesis will be found in the present number. Fortunately, the cases in which a sufficient quantity of blood escapes from a gastric or duodenal ulcer to seriously imperil life, are not common; yet, that such cases do occur is well known. That surgery can successfully deal with these cases seems now to be an established fact. This being so, it follows that surgeons should be consulted in cases of frequently recurring, small hæmorrhages, and in those cases in which large quantities of blood are vomited; and consulted before the patients become so exsanguine that their resisting and recuperative powers are lost. It is only a small percentage of gastric ulcers that will not heal under proper care, dietry, and rest. It is the neglected ulcers, and those cases of masked ulcer in which no subjective or objective symptoms occur, that more frequently go on to perforation or give rise to serious hæmorrhage.

There does not appear to be any substantial reason why an open artery in the stomach or duodenum, that threatens to destroy life, should not be tied or otherwise dealt with now that the perfection of modern surgical technique renders it comparatively safe to do so. The attempt has been made three times in the Montreal General Hospital, twice successfully, and the third case could in all probability have been saved, had the operation been undertaken before the patient became thoroughly exhausted by the repeated large hæmorrhages.

It is indeed a question whether surgery might not be resorted to more frequently in cases of prolonged, apparently incurable, gastric pain, distress accompanied by malassimilation. These conditions are often due to chronic ulceration or narrowing of the pylorus, and are followed eventually by gastric dilation and emaciation.

Truly, Listerism has done great things, not the least of which is the

widening of the field of surgery until at the present day operations can be successfully performed on parts which the older surgeons approached only at great hazard.

THE MEDICAL SERVICE FOR THE TRANSVAAL CONTINGENT.

There are probably very few, if any, real, thorough-bred Canadians who are not, regardless of party politics, really glad that the Dominion has come forward and taken upon herself a share of responsibility in defending the interests of the British Empire. It is but natural that physicians should be sufficiently "shoppy" to watch with considerable interest the selection of the surgeons whose duty it will be to look after the health of the men and officers and to treat the wounded on the field of battle. The Canadian Medical profession are also interested from the fact that the members of the Canadian Medical Corps will have to stand side by side with the members of the Royal Army Medical Corps, as representatives of Canadian surgery. It is a position of great responsibility.

That the gentlemen selected are men of rare professional attainments goes without saying. And yet one cannot help asking : Are men chosen from the ranks of specialists likely to be the best fitted for the arduous and responsible duties of military surgeons ? It is just possible that the very accomplishments, which place them in the front rank in a community of general practitioners, really unfit them for general and military surgery. Ophthalmologists may lead the world in their respective departments, and yet not be just the men one would select to deal with serious gun-shot wounds, compound fracture, etc. Their daily routine of work and habit of thought do not tend to give them that diagnostic acumen, surgical resource and familiarity with technique necessary to deal with such injuries even at home, much less under the trying circumstances under which this work must be carried out when at the front.

It would, perhaps, be unkind to intimate that political stripe or influence has had anything to do with their appointment, yet, if we are correctly informed, the services of at least one general hospital surgeon were declined, and it so happens that this surgeon is an influential member of the "opposition" in politics.

Every one will admit that in the appointment of officers and medical staff in time of war, fitness should be the only consideration. We hope that at least the Canadian Government will set an example to the world in thoroughness and completeness of equipment of the Canadian Medical Staff.

The chief of the surgical staff, Surgeon-Major Wilson, has spared neither time nor money in fitting himself for military duty, even going to England and spending months at Aldershot and taking a course of

special training with a view to becoming an efficient Army Medical Officer. Unless, however, he is properly supported by the Government at Ottawa his labours will have been more or less in vain. The most accomplished surgeon in the world cannot do much without a complete surgical equipment. We look to the Government to supply this regardless of trouble or expense.

THE CARE OF CHILDREN'S TEETH.

The care of children's teeth is a matter too often neglected, especially by persons of limited means. It has come to be taken for granted that from the cradle to the grave the teeth are an endless source of trouble, and that when a child complains of toothache it is to be regarded as one of the many childish aches and pains which will soon pass away if no attention is paid to them.

Persons of average education and intelligence will readily admit the necessity, on the score of cleanliness, of having their children's teeth brushed once or perhaps twice a day; comparatively few, however, realize the importance to their children of possessing healthy and comfortable teeth. The consequence is that advice is not usually sought until the child has complained of pain more or less severe, thereby making it a difficult thing to treat the tooth without increasing the inflammation of the already irritated pulp.

The deciduous molars are the teeth most likely to cause trouble, and parents, as a rule, do not know that these teeth are not replaced by the bicuspidis until the tenth or twelfth years. They suppose that because the deciduous incisors are lost at the seventh year all the rest of the deciduous teeth will be replaced by new ones within a few months after the loss of the incisors. The pulp of the deciduous tooth being relatively larger than that of the permanent tooth, it follows that in the former a comparatively small cavity will be sufficient to cause considerable pain from the impact of food during mastication.

Many parents, too, have the idea that if the deciduous teeth are allowed to decay the permanent teeth will come in more easily. The very opposite is the case; the pulp of the deciduous tooth performs the double function of forming the dentine of the tooth in the first instance and of absorbing the root as the crown of the permanent tooth advances. Therefore if the deciduous tooth is allowed to decay and the pulp thereby is exposed and destroyed, the absorption of the root of the tooth is arrested. One of three things then happens: the root of the deciduous tooth may be pushed out through the side of the alveolus by the advancing permanent tooth, the permanent tooth may be pushed out of line, or it may be indefinitely retarded by the presence of the dead deciduous tooth.

These, however, are only some of the minor consequences of the neglect of the deciduous teeth ; of more importance are :—first, pain, which results in the child either refusing its food or swallowing it without mastication, thereby upsetting its digestion. As the cavity increases pain becomes more severe, and leads to loss of sleep and general depression of the nervous system ; finally the pulp dies and suppuration with the formation of an alveolar abscess usually follows. This in time induces a diseased state of the gums—and may lead to chronic poisoning due to the pus and bacteria swallowed with the saliva. Those who have not had occasion to examine the mouth of a child containing two or three “dead” teeth can form no idea of the foul condition often present. If parents in general realized the depressing influence on the health of their children caused by painful and diseased teeth, the very general neglect which is now prevalent would soon disappear. Ignorance in this, as in most cases, is the chief obstacle to be overcome. Among the permanent teeth the sixth-year molar is especially liable to suffer from neglect on account of the mistaken idea that it is one of the milk teeth. It is the first of the permanent teeth to appear, coming through at the back of the jaw behind the second deciduous molar. As it does not push out any of the deciduous teeth and usually causes no pain during eruption, it is overlooked and allowed to decay. Being the largest tooth of the permanent set, it makes a great gap in the arch when extracted. In these days when the wisdom teeth are either absent altogether or so soft that they are seldom successfully saved, the loss of the sixth-year molar greatly diminishes the masticating surface of the teeth. Instead of twelve molars the individual who has lost the sixth-year molars in childhood and has no use of the wisdom teeth is reduced to four, namely, the twelfth-year molars.

Thumb sucking in children is a pernicious habit only permitted through ignorance. The pressure of the thumb against the alveolus of the superior maxilla causes it to protrude. In extreme cases the superior incisors may be nearer the horizontal than the perpendicular, and when the mouth is closed the lip cannot cover the teeth without effort. This gives an idiotic expression to the face, and, furthermore, prevents the patient from bringing the upper and lower incisors into contact.

While discussing the care of the teeth of children the subject of suitable food must not be overlooked. As a rule foods requiring vigorous mastication have a better effect on the teeth than those requiring little or none. Stale bread and butter with a glass of milk are better than a bowl of porridge and milk. The mastication necessary before the bread can be swallowed necessitates slower eating, polishes the surface of the teeth, and helps to develop the muscles of mastication, and thus aids in the development of the jaw bones. Acid fruits, if taken in large quan-

tities, have a tendency to dissolve the enamel. The writer has in mind the case of a girl aged twelve years who permanently injured the enamel of the superior incisors by the habit she had formed of squeezing grapes under the upper lip against the teeth. She declared that she had only done so during the autumn of that year, and when seen in the Christmas holidays, the enamel of the central incisors was roughened and opaque, resembling chalk in appearance and feeling. Dental caries begins on the surface of the teeth and requires an acid medium ; as the ptyaline of the saliva forms lactic acid with starchy food, the importance of thorough and frequent brushing of the teeth becomes at once apparent. White castile soap and camphorated chalk make a simple and effective dentrifice.

The shape of the tooth brush is of some importance. The bristles at the end of the brush should be the longest. This will make it much more effective in brushing the surfaces of the molars and getting between the teeth. When the permanent teeth appear, their proximate surfaces may be cleansed effectively by passing waxed floss silk between them, but care should be taken not to wound the gum where the teeth are very closely in contact. Deciduous teeth as a rule do not decay rapidly where the above simple directions are carried out systematically.

THIRTEENTH ANNUAL CONGRESS OF MEDICINE, PARIS, 1900.

It is well already to take notice in regard to the Thirteenth Annual Congress of Medicine, which will be held in Paris from August 2nd to August 9th, 1900. Doubtless a large number of Canadians will be present at that meeting, and some few it may be will desire to present communications. For that reason it is well to say now a few preparatory words.

In each country there is established a committee which may receive the names and subscriptions of those of their respective nationalities wishing to become members, either now or in Paris itself at the time of the Congress. Members can receive their cards, in either case, upon payment of the sum of 25 francs, or \$5.00. Among other advantages, members will receive a digest of the proceedings of the Congress and a printed report of the section to which the member belongs. The French language is adopted by the Congress as the official language in all international relations ; in the general assemblies, as again in the section meetings, the English, German and French languages may be employed.

There will be five main divisions, namely :—1. Biological Sciences. 2. Medical Sciences. 3. Surgical Sciences. 4. Obstetrics and Gynaecology. 5. Public Medicine. Each division or class above mentioned is divided into sections.

Thus :—(1) Biological Sciences—Descriptive and Comparative Anatomy, Histology and Embryology, Physiology with Biological Physics and Chemistry.

(2) Medical Sciences—General and Experimental Pathology, Bacteriology and Parasitology, Pathological Anatomy and Internal Pathology, Pædiatrics, Therapeutics and Pharmacology, Materia Medica, Neurology, Psychiatry, Dermatology and Syphilology.

(3) Surgical Sciences—General Surgery, Surgery of Infancy, Aural Surgery, Laryngology and Rhinology, Otology, Stomatology.

(4) Obstetrics and Gynæcology.

(5) Public Medicine—Legal Medicine, Military Surgery, Medicine.

A general catalogue of the main subjects to be treated under these headings has already been extensively circulated, and doubtless is to be had on application to Dr. Beausoleil, Montreal, who is President of the Canadian Section.

Those wishing to contribute to the various discussions, etc., should apply without delay to the general secretary of the Congress, M. Chauffard, Rue St. Guillaume 21, Paris, France.

FIRST INTERNATIONAL CONGRESS OF "PROFESSIONAL MEDICINE," PARIS, 1900.

In addition to the International Congress of Medicine, another International Congress, the first of its kind, will be held in Paris from the 23rd to the 28th of July, 1900, which also is under the patronage of the Republic, and will be conducted along the same lines as the larger Congress of the following week. This is the CONGRES INTERNATIONAL DE MEDICINE PROFESSIONELLE ET DEONTOLOGIE MEDICALE. It is difficult to find a satisfactory translation for this title in our language, for we do not employ either of the terms, "professional medicine" or "deontology" at all commonly.

The work of the Congress, however, is to deal with the relationship of the medical man with the state and with other corporate bodies ; the relationship between medical man and individual ; medical ethics and the relationship between medical men (deontology) ; and lastly, medical defense and medical insurance. Under these headings it will be seen that a very large number of subjects are included.

Among the subjects for discussion will be :—Laws regulating the exercise of medicine ; the relationships of medical men towards various charities ; relationships of medical men with the judicial authorities,—expert evidence, medical secrecy, etc. ; the relationship of medical men towards insurance companies ; industrial companies and benefit societies ; the repression of the illegal exercise of medicine and the relationship of the medical man towards nurses, instrument makers, etc. ; the organisation

of medical societies and colleges of medicine and their results in the countries where they have been established ; relations between medical men of different nationalities ; means of establishing benefit and insurance societies among medical men and the work of medical defense.

Many of these subjects are of the highest interest at the present time, and will deserve consideration and international discussion. The fee for attendance is \$3. (15 francs). The General Secretary is M. Jules Glover, Rue du Faubourg Poissonniere 37, Paris, France. The officers of the Canadian Section at present consists of Drs. Adami, Brodeur, and E. P. Lachapelle, of Montreal. A resumé of any intended communication upon any subject should be forwarded to the Secretary not later than the 1st of July. Those wishing to take part in the Congress are asked to apply in the first place to Dr. Adami, who will give all necessary information.

McGILL MEDICAL LIBRARY.

McGILL MEDICAL LIBRARY REPORT FOR 1899.

The number of volumes presented to the Library from June 4th, 1898, to May 25th, 1899, is	850
Those added by purchase	130
Total additions to May 25th	980
The number of pamphlets and reports	200
The attendance of readers from June 4th, 1898, to May, 25th, 1899, has been	8,008
The attendance from June 2nd, 1897, to May 14th, 1898, was	6,350
The attendance from June 1st, 1896, to June 1st, 1897, was	5,920
The attendance from June 1st, 1895, to June 1st, 1896, was	4,875
The number of books taken out for home use has been	3,209
The number of Journals and pamphlets has been	1,000
	4,209

This does not include the works consulted in the Library.

The Faculty has endeavored to make the Library as complete as possible for research work. Complete files of almost all the important periodicals are now on the shelves, including foreign as well as English and American Journals. A large number of transactions of various societies has recently been acquired, and also the Berlin and Paris theses.

Arrangements have been made whereby practitioners both in the city and country can avail themselves of the library, the only conditions being the payment of express charges and a guarantee for the safe return of books borrowed.

QUARTER ENDING, OCTOBER 31ST, 1899.

The following authors have presented copies of their works to the Library :

- Barclay—Medical Chemistry, 1898.
- Bowhill Thomas, F.R.C.V.S., F.R.P.S.—Manual of Bacteriological Technique and Special Bacteriology, 1899.
- Gilbert A. Bannatyne, M.D., M.R.C.P.—Thermal Waters of Bath, 1899.
- Edward M. Brockbank, M.D., M.R.C.P.—Murmurs of Mitral Disease, 1899.
- A. M. Brown, M.D.—Elements of Alkaloidal Ætiology, Introduction to the Study of Auto-intoxication in Disease, 1899.

Albert H. Buck, M.D.—Translation of Dr. Ziegler's General Pathology, 1899.

Sir Dyce Duckworth, M.D.—Harveian Oration, 1898.

Henry A. Fairbairn, M.A., M.D.—College Warden, 1899.

W. D. Halliburton, M.D., F.R.S.—Essentials of Chemical Physiology, 1899.

H. A. Hare, M.D.—Cold Bath Treatment of Typhoid Fever, 1898.

W. Bevan Lewis, M.R.C.P. Lond., M.R.C.P. Eng.—Text-book of Mental Diseases, 1899.

Luff—Gout, 1899.

Benjamin Moore, M.A.—Elementary Physiology, 1899.

William James Morton, M.D.—“Cataphoresis” or Electric Medicamental Diffusion as applied in Medicine, Surgery, and Dentistry, 1898.

Stephen Paget, F.R.C.S.—Essays for Students, 1899.

The Library is also indebted to the following contributors :

Professor Adami :

Tuberculosis of the Genito-Urinary Organs, Male and Female, by N. Senn, M.D., Ph.D., LL.D., 1897 : Fortschritte der Medicin, 1897.

Professor Blackader :

Transactions of the Association of American Physicians, 1897 : Transactions of the College of Physicians, 1898. Transactions of the Congress of American Physicians and Surgeons, 1897.

Professor Buller :

A large collection of unbound journals.

Professor Cameron :

Transactions of the Pan-American Medical Congress, two volumes, 1898. American Journal of Obstetrics, 1898. British Gynæcological Journal, 1898.

Dr. G. Gordon Campbell :

International Clinics, two volumes, 1899.

Dr. W. S. Galbraith :

Illustrations of Zoology, 1-8, by Smith and Norwell, 1895 : Outlines of Classification, by D. P. Penhallow, B.Sc., M.A.Sc.

Montreal Medical Journal, Editors of :

Index Catalogue, Surgeon-General's Office, volume iv. : Charlotte Medical Journal, 1898 : Southern California Practitioner, 1898.

Campbell Nelles, Esq. (through the kindness of Dr. Ruttan) :

Types of Mankind, by S. Gullorlois, M.D.

Publishers' Committee :

McGill Annual, 1899.

Professor Ruttan :

Proceedings and Transactions of the Royal Society of Canada, 3 vols., 1896-1898.

Professor Stewart :

A large collection of unbound journals.

Transactions and Reports :

Annual Report of the Health Department, San Francisco, 1897.

Annual Report of the Medical Officer of Health of the City of Edinburgh, 1899.

Catalogue of the Museum of the Royal College of Surgeons, Edinburgh, 2 vols., 1898.

Eye and Ear Infirmary Reports, 1899.

Glasgow Hospital Reports, 1898.

Johns Hopkins Hospital Reports, 1899.

King's College Hospital Reports, 1899.

Massachusetts General Hospital Reports, 1899.

Proceedings of the Connecticut Medical Society, 1899.

- Marine Hospital Service of the United States, Annual Report, 1899.
 Studies from the Department of Pathology of the College of Physicians and Surgeons, 1898-99.
 Transactions of the Association of American Physicians, 1897.
 Transactions of the Dermatological Society of Great Britain, 1899.
 Transactions of the American Association of Obstetricians and Gynæcologists, 1899.
 Transactions of the College of Physicians, 1898.
 Transactions of the Congress of American Physicians and Surgeons, 1897.
 Transactions of the Medical Society of the State of New York, 1899.
 Transactions of the Maine Medical Association, 1899.

PUBLISHERS.

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PAMPHLETS AND REPRINTS.

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